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ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

FOR

1894-95. - 1901-02

132909

By

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FROM

RÁI SARAT CHANDRA BANARJI, BAHADUR, M.A., B.L.,

Offg. Director, Department of Land Records and Agriculture, Assam,

To

THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Shillong, the 15th June 1895.

SIR,

I have the honour to submit the Annual Note on Crop Experiments carried out in Assam during the year 1894-95.

I have the honour to be,

SIR,

Your most obedient Servant,

S. C. BÁNÁRJI,

Offg. Director, Department of Land Records and Agriculture, Assam.

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Note on Crop Experiments carried out in Assam during the year 1894-95.

Nature of experiments.

Experiments were made during the year under report to ascertain the outturn of—

A.—Rice of various kinds.

B.—Sugarcane.

C.—Miscellaneous crops.

D.—Mustard.

The maund has been taken at 82$\frac{2}{7}$lbs. and the *bigha* at one-third of an acre. Up to the year 1883-94, the maund was taken at 80lbs.

In order to maintain accuracy in the weighment of crops and to discourage as far as possible weighment by different local measures, arrangements were made to supply experimenting officers with steel-yards for weighing the grain, &c., where necessary. A steel-yard was supplied during the year to each of the following officers: Subdivisional Officer, South Sylhet, Subdivisional Officer, Karimganj, Deputy Commissioner, Khási and Jaintia Hills, Subdivisional Officer, Jowái, Deputy Commissioner, Goálpára, and Deputy Commissioner, Sibságar. Besides, two 30 ft. chains and two optical squares were supplied to the Deputy Commissioner, Khási and Jaintia Hills, for the survey of crop-bearing lands experimented upon. The total cost of supplying these instruments was Rs. 246.

Number of experiments.

2. The following statement shows the number of experiments carried out in each district as compared with the figures of the preceding year:

Number of Experiments.

Crop.	Cáchár.		Sylhet.		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Khási and Jaintia Hills.		Gáro Hills.		Total for the Province.	
	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.
Sáli ..	1	59	50	51	14	22	54	54	21	7	42	32	55	34	45	52	6	34	4	9	292	354
Áhu ..	6	18	6	9	25	40	27	60	6	..	29	81	9	10	14	34	106	90	12	4	240	346
Báo ..	6	14	27	38	..	3	23	25	..	..	8	12	..	..	..	..	..	..	..	..	64	92
Sáilbura ..	..	..	..	13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13
Cane ..	..	12	16	8	2	2	24	12	10	9	14	22	14	17	36	33	..	..	..	..	116	115
Linseed ..	..	..	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	..
Rapeseed ..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Mung ..	..	..	..	..	..	..	15	10	1	..	5	3	..	..	..	..	..	..	..	..	21	13
Til ..	..	..	..	..	..	..	11	7	..	..	..	..	..	..	..	..	..	..	..	..	11	7
Cotton ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	..	9
Mátikálái ..	..	4	1	..	10	7	26	11	7	4	29	23	27	12	33	32	..	..	..	..	133	93
Mustard ..	..	8	18	14	13	7	10	9	6	3	23	31	18	7	22	9	..	..	..	..	110	88
Potato ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	3
Total ..	13	115	127	135	64	81	190	188	51	23	150	204	123	80	150	163	112	124	16	22	996	1,135

There was an increase in the number of experiments effected during the year distributed amongst almost all the districts, the increase being largest in Cáchár (115 against 13). Sibságar and Darrang, however, show a falling off, only 23 experiments having been made in the latter district, against 51 in 1893-94.

A.—RICE.

I.—Brahmaputra Valley.

Brahmaputra Valley rice experiments.

3. The three statements below give the results of the experiments made during the year with the three main varieties of rice grown in the districts of the Brahmaputra Valley :

Sáli.

		Goálpára.		Kámrúp.		Darrang.		Nowgóng.		Sibságar.		Lakhimpur.		Total.	
		Bar dhán.	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*
Number of experiments.	1893-94 ..	12	2	28	26	21	..	16	26	45	10	42	3	164	67
	1894-95 ..	22	..	33	21	6	1	21	11	31	3	44	8	157	44
Total area cut, in acres.	1893-94 ..	4·00	0·66	7·75	7·50	6·73	..	5·36	7·83	11·28	2·48	7·00	0·50	42·12	18·97
	1894-95 ..	7·16	..	10 67	6·67	1·37	0·25	7·00	3·67	9·25	0·83	14·67	2·67	50·12	14·09
Total crop reaped, in lbs.	1893-94 ..	3,239	1,484	10,376	8,954	10,756	..	8,136	10,076	13,788	3,438	10,521	734	56,816	24,686
	1894-95 ..	13,639	..	18,115	9,559	2,719	555	12,787	5,636	6,844	1,189	25,041	4,076	79,145	21,015
Maximum per acre, in lbs.	1893-94 ..	2,184	2,334	4,080	2,940	2,772	..	2,700	2,430	2,478	2,760	2,220	1,800	4,080	2,940
	1894-95 ..	2,499	..	3,086	2,530	2,370	2,220	3,332	2,839	3,629	2,178	2,592	2,056	3,629	2,839
Minimum per acre, in lbs.	1893-94 ..	780	2,118	486	552	600	..	432	492	570	558	540	1,236	432	492
	1894-95 ..	1,018	..	845	864	1,092	2,220	586	173	432	556	691	1,061	432	173
Average per acre, in lbs.	1893-94 ..	809	2,248	1,339	1,194	1,598	..	1,517	1,286	1,222	1,386	1,503	1,468	1,348	1,301
	1894-95 ..	1,905	..	1,698	1,433	1,985	2,220	1,827	1,536	740	1,432	1,707	1,526	1,579	1,491

Áhu.

		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
Number of experiments	1893-94 ..	20	5	27	..	..	6	29	..	9	..	13	1	98	12
	1894-95 ..	40	..	40	20	..	..	79	2	10	..	34	..	203	2
Total area cut, in acres	1893-94 ..	6·66	1·66	8·16	..	..	1·58	9·40	..	3·00	..	2·16	0·16	29·38	3·40
	1894-95 ..	13·33	..	12·16	5·73	..	..	25·27	0·67	3·33	..	9·50	..	63·59	6·40
Total crop reaped, in lbs.	1893-94 ..	9,692	3,544	8,840	..	..	2,054	11,314	..	3,484	..	3,603	190	36,933	5,788
	1894-95 ..	22,655	..	10,990	6,495	..	..	33,807	815	2,047	..	12,262	..	81,761	7,310
Maximum per acre, in lbs.	1893-94 ..	2,490	2,946	2,112	..	..	2,040	2,190	..	2,172	..	2,916	1,187	2,490	2,946
	1894-95 ..	3,313	..	1,925	1,925	..	..	2,543	1,487	1,500	..	2,777	..	3,313	1,925
Minimum per acre, in lbs.	1893-94 ..	762	1,746	168	..	..	216	240	..	660	..	732	1,187	168	190
	1894-95 ..	864	..	264	259	..	..	309	957	265	..	185	..	195	259
Average per acre, in lbs.	1893-94 ..	1,455	2,135	1,083	..	..	1,800	1,204	..	1,161	..	1,668	1,187	1,257	1,702
	1894-95 ..	1,699	..	904	1,133	..	..	1,338	1,216	615	..	1,291	..	1,286	1,142

Báo.

		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
Number of experiments.	1893-94 ..	....	..	23	....	....	....	8	....	..	..	....	..	31	....
	1894-95 ..	3	..	25	....	....	....	12	....	..	..	....	..	40	....
Total area cut, in acres.	1893-94 ..	....	..	6·91	....	....	....	2·66	....	..	..	....	..	9·57	....
	1894-95 ..	0·57	..	7·67	....	....	....	4·00	....	..	..	....	..	12·24	....
Total crop reaped, in lbs.	1893-94 ..	....	..	5,938	....	....	....	4,684	....	..	..	....	..	10,622	....
	1894-95 ..	827	..	7,858	....	....	....	4,559	....	..	..	....	..	13,244	....
Maximum per acre, in lbs.	1893-94 ..	....	..	1,710	....	....	....	2,700	....	..	..	....	..	2,700	....
	1894-95 ..	1,851	..	2,253	....	....	....	1,605	....	..	..	....	..	2,253	....
Minimum per acre, in lbs.	1893-94 ..	....	..	240	....	....	....	552	....	..	..	....	..	240	....
	1894-95 ..	420	..	290	....	....	....	370	....	..	..	....	..	290	....
Average per acre, in lbs.	1893-94 ..	....	..	860	....	....	....	1,760	....	..	..	....	..	1,110	....
	1894-95 ..	1,451	..	1,024	....	....	....	1,140	....	..	..	....	..	1,082	....

Experiments in the two kinds of *sáli*, viz., *bar dhán* and *láhi dhán*, number 3,797 to the close of the year 1894-95. The total area cut is 1,225·71 acres with a total outturn of 1,946,630lbs., and the average yield per acre amounts to 1,588lbs., or over 19 maunds.

Bar dhán, which grows on a heavy clay soil, is known to give a greater yield than *láhi dhán*, which favours a lighter soil, and the averages brought out by the experiments from year to year show this to be the case, notwithstanding such figures as those furnished by Sibságar during the year, showing an average of only 740lbs. for *bar dhán*, against 1,432lbs. for *láhi dhán*, and the figures shown against Goálpára last year, *viz.*, 809lbs. and 2,248lbs., for *bar dhán* and *láhi dhán*, respectively. The very small number of experiments made and the relatively small area involved in the case of *láhi dhán*, seems to be the explanation of these abnormal results.

Áhu is sometimes transplanted, but is usually sown broadcast. The total number of experiments in *áhu dhán* (both transplanted and broadcast) up to date has been 1,855, the total area cut 625·32 acres, the total crop reaped 836,286lbs., and the average outturn per acre 1,337lbs., or a little over 16 maunds.

Báo dhán is chiefly sown broadcast, but there are considerable areas where transplanted *báo dhán* yields a good harvest, sometimes equalling if not excelling, *sáli dhán*. No experiments were made in any of the districts in the transplanted variety during the past two years. The total number of experiments with the two kinds of *báo dhán* up to date has been 475, the total area cut 155·82 acres, and the total crop reaped 194,599 lbs., the average outturn per acre is 1,248lbs., or a little over 15 maunds.

II.—SYLHET.

4. The following statement gives details as to the rice experiments made in Sylhet during the two years 1893-94 and 1894-95:

Sylhet rice experiments.

	Lowland *áus*.			Highland *áus*.						*Murâli*.			*Sâli*.			Lowland *Áman*.			Highland *Áman*.						*Kátárid*.			*Sâilbura*.		
				Transplanted.			Broadcast.												Transplanted.			Broadcast.								
	In 1893-94.	In 1894-95.	Total of seven years ending 1894-95.	In 1893-94.	In 1894-95.	Total of seven years ending 1894-95.	In 1893-94.	In 1894-95.	Total of seven years ending 1894-95.	In 1893-94.	In 1894-95.	Total of seven years ending 1894-95.	In 1893-94.	In 1894-95.	Total of twelve years ending 1894-95.	In 1893-94.	In 1894-95.	Total of seven years ending 1894-95.	In 1893-94.	In 1894-95.	Total of seven years ending 1894-95.	In 1893-94.	In 1894-95.	Total of seven years ending 1894-95.	In 1893-94.	In 1894-95	Total of seven years ending 1894-95.	In 1893-94.	In 1894-95.	Total of twelve years ending 1894-95.
Number of experiments	2	4	30	4	1	33	..	4	56	..	..	10	50	51	446	12	11	138	4	8	25	8	16	116	3	3	29	..	13	223
Total area cut, in acres	0·50	0·78	8·71	1·00	0·26	8·55	..	0·98	13·34	..	..	2·56	10·91	13·62	115·02	2·75	3·05	37·45	0·66	2·37	5·77	1·73	4·32	32·81	0·75	0·67	7·75	..	3·50	63·92
Total crop reaped, in lbs.	354	1,547	10,733	994	607	11,562	..	602	13,630	..	..	2,825	19,963	31,482	169,117	3,840	4,028	48,646	714	3,579	8,829	1,780	6,254	50,508	912	1,146	11,559	..	7,045	103,860
Maximum per acre, "	1,000	2,455	3,218	1,440	2,334	2,432	..	802	3,786	..	..	2,152	4,480	4,986	4,986	1,920	1,944	2,668	2,436	2,468	2,468	7,808	2,216	7,808	1,840	2,200	2,200	..	3,017	4,363
Minimum " "	416	1,705	360	720	2,234	480	..	401	204	..	..	420	250	159	159	480	617	360	680	477	477	350	750	198	808	1,071	808	..	1,474	240
Average " " ..	708	1,983	1,232	994	2,334	1,352	..	614	1,021	..	..	1,104	1,829	2,311	1,470	1,396	1,327	1,298	1,081	1,510	1,530	1,028	1,447	1,539	1,216	1,710	1,491	..	2,012	1,624

Three hundred and twenty-six experiments with early rice (*áus* and *muráli*) have up to date been made in Sylhet, the total area cut being 85·06 acres, the total crop reaped 97,146lbs., and the average outturn per acre 1,142lbs., or a little less than 14 maunds.

Altogether up to date there have been 590 experiments in highland and lowland *áman* and *kátáriá* varieties taken together. The area cut is 159·45 acres, the crop reaped 239,304lbs., and the average outturn 1,500lbs., or a little over 18 maunds per acre.

In *sáil* the total number of experiments made up to date is 446, the area cut being 115·02 acres, crop reaped 169,117lbs., and the average outturn 1,470lbs., or a little below 18 maunds.

III.—CÁCHÁR.

5. The results of experiments made in the principal varieties of rice known in Cáchár, are given in the following statement :

Cáchár rice experiments.

	Dumái.			*Muráli.*				*Ásrá.*			*Sáil.*		
					1894-95.								
	1893-94.	1894-95.	Total of seven years ending 1894-95.	1893-94.	Broadcast.	Transplanted.	Total of seven years ending 1894-95.	1893-94.	1894-95.	Total of seven years ending 1894-95.	1893-94.	1894-95.	Total of twelve years ending 1894-95.
Number of experiments ..	2	3	18	4	10	5	46	6	14	31	1	59	205
Total area cut, in acres ..	0·66	1·00	5·17	0·96	2·68	1·51	13·01	1·54	4·67	9·81	4·00	19·66	61·13
Total crop reaped, in lbs. ..	724	790	5,198	974	4,693	1,813	16,609	1,438	7,423	13,033	7,680	31,425	100,342
Maximum per acre „ ..	1,302	1,476	1,560	1,249	2,877	1,512	2,877	1,843	2,511	2,511	1,920	2,532	3,200
Minimum „ „ ..	870	402	402	730	975	924	451	702	819	606	1,920	618	464
Average „ „ ..	1,097	790	1,005	1,014	1,750	1,201	1,276	933	1,589	1,328	1,920	1,599	1,641

The total number of experiments made up to date with *dumái* and *muráli* is 126, the total area cut being 33·68 acres, total crop reaped 41,846lbs., and the average outturn per acre 1,242lbs., or a little over 15 maunds.

Thirty-one experiments with *ásrá* have up to date been made, the total area cut being 9·81 acres, total crop reaped 13,033lbs., and the average outturn per acre is 1,328lbs., or a little over 16 maunds.

Experiments in *sáil* up to the close of the year 1894-95 number 205. The total area cut is 61·13 acres with a total outturn of 100,342lbs., and the average yield per acre amounts to 1,641lbs., or about 20 maunds.

It is interesting to compare the yield of the three chief varieties of *dhán* in the Brahmaputra Valley with the corresponding varieties in Sylhet and Cáchár, *sáli dhán* in the former standing for *sáil* in the latter, *báo* for *áman* and *ásrá*, and *dumái* and *muráli* for *áus*.

Varieties of *dhán*.	Average yield per acre in lbs. for the year 1894-95.		
	Brahmaputra Valley.	Sylhet.	Cáchár.
Sáli or *Sáil*	1,560	2,311	1,599
Báo, *áman*, and *ásrá*	1,082	1,423	1,589
Áus, *dumái*, and *muráli*	1,272	1,364	1,406

IV.—Hill Rice Experiments.

Hill rice experiments.

6. The statements below show the results of the rice experiments made in the Khási and Jaintia, and Gáro Hills districts during the year under report :

Khási and Jaintia Hills.

	Upland rice.			Lowland rice.		
	1893-94.	1894 95.	Total (13 years) ending 1894-95.	1893-94.	1894-95.	Total (13 years) ending 1894-95.
Number of experiments	106	90	587	6	34	661
Total area cut, in acres	26·50	30·00	154·30	1·50	11·33	169·01
Total crop reaped, in lbs.	14,562	28,858	117,248	1,520	6,688	155,984
Maximum per acre, „	1,120	2,129	2,264	1,800	1,481	3,400
Minimum „ „	240	370	40	560	247	192
Average „ „	549	962	760	1,013	590	923

Gáro Hills.

	Ásu.			*Sáli.*		
	1893-94.	1894-95.	Total (13 years), ending 1894-95.	1893-94.	1894-95.	Total (13 years), ending 1894-95.
Number of experiments	12	4	97	4	9	25
Total area cut, in acres	4·00	1·33	31·13	1·33	3·00	8·31
Total crop reaped, in lbs.	4,710	2,495	29,627	2,120	4,011	12,599
Maximum per acre, „	2,460	2,480	2,480	2,010	1,685	2,730
Minimum „ „	300	1,222	160	1,290	962	738
Average „ „	1,177	1,876	952	1,594	1,337	1,516

B.—SUGARCANE.

7. The statement below shows the results of experiments made by tahsildárs and officers above that rank:

Experiments by superior officers.

B.—SUGARCANE.

District.	Number of experiments.		Total area, in acres.		Total weight of cane, in lbs.		Total weight of juice, in lbs.		Total weight of *gur*, in lbs.		Weight of *gur* per acre, in lbs.		Pounds of juice per 100lbs. of cane.		Pounds of *gur* per 100lbs. of cane.		Pounds of *gur* per 100lbs. of juice.	
	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.
Cáchár	..	1	..	0·11	..	2,514	..	1,285	..	179	..	1,627	..	51·11	..	7·12	..	13·93
Sylhet	1	3	0·005	0·14	350	3,950	156	2,277	22	306	4,400	2,186	44·57	57·64	6·28	7·74	14·10	13·43
Total Surma Valley	1	4	0·005	0·25	350	6,464	156	3,562	22	485	4,400	1,940	44·57	55·10	6·28	7·50	14·10	13·61
Kámrúp	18	12	2·26	1·55	42,322	53,773	15,400	17,216	2,156	4,435	954	2,861	36·38	32·01	5·09	8·24	14·00	25·76
Darrang	5	9	0·30	0·37	4,762	7,364	2,670	3,737	446	660	1,486	1,783	56·07	50·75	9·37	8·96	16·70	17·66
Nowgong	2	3	0·33	0·33	5,988	7,200	2,812	3,065	120	349	363	1,057	46·96	42·56	2·00	4·85	4·26	11·38
Sibságar	4	1	0·08	0·06	1,290	1 100	920	961	224	123	2,800	1,537	71·32	87·36	17·36	11·18	24·25	12·79
Lakhimpur	..	2	..	0·13	..	2,746	..	1,423	..	247	..	1,900	..	51·82	..	8·99	..	17·35
Total Brahmaputra Valley	29	27	2·97	2·44	54,362	72,183	21,802	26,402	2,946	5,814	992	2,382	40·10	36·57	5·42	8·05	13·51	22·02
Total for the Province	30	31	2·975	2·69	54,712	78,647	21,958	29,964	2,968	6,299	998	2,341	40·13	38·09	5·42	8·00	13·51	21·02
Total for *1892-93*	13		1·37		34,180		13,148		2,342		1,709		38·47		6·85		17·81	
„ 1891-92	8		1·06		6,490		3,564		730		688		54·91		11·42		20·48	
„ 1890-91	8		0·57		10,486		5,711		891		1,563		54·46		8·49		15·60	
„ 1889-90	30		2·45		45,789		21,691		2,611		1,065		47·37		5·70		12·03	
„ 1888-89	24		3·64		52,623		27,204		4,472		1,228		51·69		8·49		16·43	
„ 1887-88	13		2·36		59,946		32,504		5,782		2,450		54·22		9·65		17·79	
„ 1886-87	24		4·97		98,654		51,158		6,594		1,326		51·85		6·68		12·88	
„ 1885-86	15		2·37		60,419		28,013		4,611		1,962		46·36		7·63		16·46	
„ 1884-85	16		1·07		28,891		12,310		2,529		2,350		42·60		8·76		20·50	
„ 1883-84	20		....		96,373		38,111		7,889		....		39·50		8·18		20·70	
	230		25·505		6,27,210		2,85,336		47,718		1,561		45·49		7·60		16·72	

8. The following statement gives the details of experiments made by mauzádárs and subordinate police officers:

Mauzádárs' experiments.

District.	Number of experiments.		Total area, in acres.		Total weight of cane, in lbs.		Total weight of juice, in lbs.		Total weight of *gur*, in lbs.		Weight of *gur* per acre, in lbs.		Pounds of juice per 100lbs of cane.		Pounds of *gur* per 100lbs. of cane.		Pounds of *gur* per 100lbs. of juice.	
	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.
Cáchár	..	11	..	0·73	..	9,448	..	5,789	..	893	..	1,223	..	61·27	..	9·45	..	15·42
Sylhet . ..	15	5	2·67	0·33	25,326	23,278	14,560	13,094	2,492	1,934	933	5,860	57·49	56·25	9·83	8·30	17·11	14·77
Total Surma Valley ..	15	16	2·67	1·06	25,326	32,726	14,560	18,883	2,492	2,827	933	2,667	57·49	57·70	9·83	8·61	17·11	14·44
Goálpára	2	2	0·25	0·28	4,516	6,140	2,234	3,370	490	786	1,960	2,807	49·46	54·88	10·85	12·80	21·93	23·32
Kámrúp	6	..	0·40	..	3,546	.	1,2[illegible]4	..	304	..	760	..	34·23	..	8·56	..	25·01	..
Darrang	5	..	0·43	..	5,358	..	2,384	..	414	..	963	..	44·59	..	7·73	..	15·75	..
Nowgong	12	19	1·75	1·40	29,448	14,667	14,110	7,755	1,084	1,069	619	763	47·91	52·87	3·68	7·28	7·67	13·78
Sibságar	10	16	1·08	0·85	16,794	24,459	7,93[illegible]	13,063	1,194	1,502	1,105	1,767	47·23	53·40	7·11	6·14	15·05	11·49
Lakhimpur	36	31	1·20	1·07	17,707	33,023	9,890	17,576	2,579	4,077	2,149	3,810	55·85	53·22	14·56	12·34	26·08	23·19
Total Brahmaputra Valley .	71	68	5·11	3·60	77,369	78,289	37,764	41,764	6,065	7,434	1,186	2,065	48·81	53·34	7·84	9·49	16·06	17·80
Total for the province ..	86	84	7·78	4·66	102,695	111,015	52,324	60,647	8,557	10,261	1,10	2,201	50·95	54·62	8·33	9·24	16·35	16·91
Total for 1892-93 ..	79		4·55		86,816		41,976		8,370		1,691		48·35		9·64		19·94	
„ 1891-92 ..	89		9·93		134,270		68,500		12,734		1,282		51·01		9·48		18·59	
„ 1890-91 ..	113		8·75		154,247		75,881		13,709		1,566		49·20		8·88		18·06	
„ 1889-90 ..	101		11·73		182,400		84,873		14,014		1,194		46·53		7·68		16·51	
„ 1888-89 ..	126		11·83		193,057		93,272		16,787		1,419		48·31		8·69		17·99	
„ 1887-88 ..	135		18·90		286,466		139,159		24,717		1,307		48·58		8·60		17·80	
„ 1886-87 ..	104		19·03		311,112		157,705		27,843		1,463		50·69		8·94		17·65	
„ 1885-86 ..	78		13·68		310,187		127,636		21,548		1,575		41·15		6·95		16·88	
„ 1884-85 ..	135		19·52		426,957		194,428		33,172		1,699		45·54		7·70		17·09	
„ 1883-84 ..	60		..		113,956		59,048		11,081		..		51·81		9·70		17·00	
	1,190		130·76		2,413,178		1,155,459		202,793		1,466		47·88		8·40		17·55	

Net results.

9. The net result of all experiments made up to date with sugarcane is given below:

(*a*) From superior officers' experiments—

(1) The weight of *gur* (molasses) per acre is 1,561lbs.

(2) Cane yields 45·49 per cent. of its weight of juice and 7·60 of its weight of *gur* (molasses).

(3) The juice yields 16·72 per cent. of its weight of *gur* (molasses).

(*b*) From inferior officers' experiments—

(1) The weight of *gur* (molasses) per acre is 1,466lbs.

(2) Cane yields 47·88 per cent. of its weight of juice and 8·40 per cent. of its weight of *gur* (molasses).

(3) The juice yields 17·55 per cent. of its weight of *gur* (molasses).

(*c*) From all experiments combined—

(1) The weight of *gur* (molasses) per acre is 1,481lbs.

(2) Cane yields 47·38 per cent. of its weight of juice and 8·23 per cent. of its weight of *gur* (molasses).

(3) The juice yields 17·38 per cent. of its weight of *gur* (molasses).

As some misunderstanding seemed to exist as to the exact area to be experimented upon in the case of sugarcane, instructions have recently been issued to the effect that in no case should an experiment with sugarcane be carried out over an area of less than one-fifth of a Bengali *bigha* in extent, or more than half a *bigha*. This rule should prevent extraordinary results like that reported last year from Sylhet, where the only experiment made by a superior officer during the year on an area of ·005 of an acre gave the outturn as 4,400lbs. of *gur* per acre—a figure nearly double the highest average attained during any of the ten previous years.

Miscellaneous crops.

C.—MISCELLANEOUS CROPS.

10. The following statement gives the result of the experiments made up to date with *máti máh* (phaseolus mungo *var.* radiatus), *mung* (phaseolus mungo), rapeseed, *til* (sesamum), cotton, and potato :

C.—Miscellaneous Crops.

	Máti máh (phaseolus mungo var. radiatus).																				*Mung* (phaseolus mungo).								Rapeseed.				*Til* (sesamum).				Cotton.				Potato.			
	Cáchár.		Sylhet.		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Total up to the end of		Kámrúp.		Darrang.		Nowgong.		Total up to the end of		Sylhet.		Total up to the end of		Kámrúp.		Total up to the end of		Gáro Hills.		Total up to the end of		Lakhimpur.		Total up to the end of	
	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.
Number of experiments ..	..	4	1	..	10	7	26	11	7	4	29	23	27	12	33	32	1,636	1,729	15	10	1	..	5	3	110	123	..	2	24	26	11	7	78	85	..	9	11	20	..	3	2	5
Total area experimented upon, in acres ..	..	1·33	0·06	..	3·16	2·30	4·11	2·06	2·33	0·82	8·25	7·67	7·42	2·95	5·50	10·67	30·77	58·54	2·48	1·93	0·07	..	1·66	1·00	22·69	25·62	..	0·15	13 50	13·65	1·90	0·97	22·74	23·71	..	3·00	4·41	7·41	..	1·00	0·13	1·13
Total crop gathered, in lbs. ..	..	164	40	..	1,134	849	982	499	1,506	210	4,354	3,164	2,894	1,310	3,509	6,036	14,462	26,694	522	555	24	..	402	230	8,472	9,257	..	35	4,602	4,637	578	272	6,385	6,657	..	547	1,362	1,909	..	3,810	230	4,040
Maximum per acre, in lbs. ..	..	216	666	..	540	617	1,200	518	1,458	309	1,080	666	1,080	938	2,100	975	2,100	2,100	840	599	360	..	450	401	840	840	..	300	1,028	1,028	720	407	1,058	1,058	..	302	885	885	..	6,171	3,333	6,171
Minimum per acre, in lbs. ..	..	24	666	..	102	25	60	62	192	234	114	173	120	154	96	74	18	18	42	154	360	..	96	136	42	42	..	164	36	36	60	46	60	46	..	62	78	62	..	1,296	1,300	1,296
Average per acre, in lbs. ..	..	123	666	..	358	869	239	242	646	256	527	412	390	448	638	566	470	456	210	288	360	..	242	230	373	361	..	233	340	339	304	280	280	280	..	182	309	257	..	3,810	1,769	3,575

Of miscellaneous crops, experiments in *máti-kálái* (phaseolus mungo *var.* radiatus), the pulse in common use among the people, especially in the Brahmaputra Valley, were made in all the plains districts except Sylhet, and give an average to date of 456lbs. per acre. *Mung* (phaseolus mungo), another pulse in common use, shows an average of 361lbs. The experiments have, however, been confined to Kámrúp, Darrang, and Nowgong during the past two years.

Rape seed experiments have been confined to Sylhet. It must be noted, however, that what is described as rape is only an inferior kind of radish or *mulá*. It is doubtful if it should be translated as rape. It is known as "*dherua*" in the Brahmaputra Valley, and is sometimes grown for its seed, from which an inferior kind of oil is expressed. It will grow on lands too poor for mustard, and requires less preparation of the soil. It does not develop much of a root, but the stalk and leaves are used as a kitchen vegetable. *Til* (sesamum) gives an average of 280lbs per acre. Cotton experiments are almost solely confined to the Gáro Hills, and give an average so far of 257lbs. Potatoes show only five experiments up to date made in the two districts of Darrang and Lakhimpur, and give an average of 3,575lbs. to the acre. It would be instructive to compare this with the yield in the Khási Hills, but apparently no experiments have ever been made there.

D.—MUSTARD.

11. The statement below gives the results of the experiments in mustard seed carried out during each of the two years 1893-94 and 1894-95:

Mustard experiments.

Experiments.	Cachár.		Sylhet.		Total Surma Valley.		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Total Brahmaputra Valley.		Total for the Province.		Total for the Province up to the end of	
	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.
Number of experiments	...	8	18	14	18	22	13	7	10	9	6	3	23	31	18	7	22	9	92	66	110	88	1,860	1,948
Total area experimented upon, in acres	...	2·67	3·55	3·30	3·55	5·97	3·33	2·33	2·75	2·67	2·00	1·00	7·66	10·33	5·84	1·48	3·67	3·00	25·75	20·81	29·30	26·78	627·11	653·59
Total crop gathered, in lbs.	...	706	1,878	1,543	1,878	2,249	2,502	987	1,380	1,226	1,700	576	5,496	5,784	1,896	761	3,496	2,653	16,476	11,987	18,354	14,236	314,183	329,419
Maximum per acre, in lbs.	...	414	1,680	1,132	1,680	1,132	1,320	574	726	1,573	1,950	802	1,272	1,320	1,008	1,160	1,896	1,161	1,950	1,573	1,950	1,573	2,100	2,100
Minimum per acre, in lbs.	...	123	40	204	40	123	192	271	234	21	504	358	216	185	60	185	252	463	60	21	40	21	30	21
Average per acre, in lbs.	...	264	529	467	529	377	653	424	502	459	853	576	717	560	325	514	953	884	639	576	626	532	501	572

Mustard seed is one of the most important articles of export from the Brahmaputra Valley, and a large number of experiments are made annually in all the districts of the valley. The total number of experiments to end of 1894-95 is 1,671.* Cachar, where the cultivation is insignificant, shows a few experiments (eight) for the first time during the year under report, and the average yield is given as 264lbs. per acre, which is much below the yield in any of the districts of the Brahmaputra Valley, where it ranges from 300 to 800lbs. roughly, the average for the valley up to date being 525lbs.

GENERAL REMARKS.

Rejected experiments.

12. Following the principles laid down in paragraph 26 of the Crop Note of 1889-90, a large number of experiments were rejected, because the area experimented on was over one *bigha* in the case of rice, mustard, or miscellaneous crops, or over half a *bigha* in the case of sugarcane. Experiments, which appeared impossibly above or impossibly below the average, have also been rejected. The following statement shows the number of rejected experiments in each district during the years 1893-94 and 1894-95 :

District.	Rice.				Cane.				Mustard.				Miscellaneous crops.			
	Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.	
	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.	1893-94.	1894-95.
Cáchár	..	1	..	0·34	..	..	..	..	..	..	..	..	..	..	..	..
Sylhet	..	4	..	1·50	..	..	..	..	..	..	..	..	..	1	..	0·33
Goálpára	4	3	1·50	2·00	3	..	1·00	..	1	3	0·50	1·83	2	1	1·25	1·16
Kámrúp	1	2	0·66	1·33	..	..	..	..	3	..	0·20	..	..	..	..	..
Darrang	..	3	..	1·00	..	..	..	..	..	..	..	..	..	..	..	..
Nowgong	8	10	3·33	3·33	..	4	..	1·33	..	..	..	..	..	..	..	..
Sibságar	1	9	0·66	3·18	1	..	0·33	..	..	..	..	..	..	..	..	..
Total	14	32	6·15	12·68	4	4	1·33	1·33	4	3	0·70	1·83	2	2	1·25	1·49

Experimenting officers.

13. The names of superior officers who conducted experiments are given in the statement below :

Name.	Rice.	Cane.	Mustard.	Miscellaneous crops.	Total.
G. Balthasar, Esq., Superintendent, Silchár Jail, Cáchár... ...	1	...	...	...	1
Babu Dakshiná Charan Sen, Sub-Deputy Collector, Cáchár ...	2	1	...	...	3
„ Pradyumna Charan Dás, Tahsildár, Cáchár	6	...	...	...	6
„ Harish Chandra Sen, Tahsildár, Cáchár	6	...	...	...	6
F. C. Henniker, Esq., Subdivisional Officer, Maulvi Bázár, Sylhet ...	2	...	...	...	2
A. G. Hallifax, Esq., Subdivisional Officer, Karimganj, Sylhet ...	3	...	...	...	3
Babu Ráj Mohan De, Subdivisional Officer, Habiganj, Sylhet ...	3	1	...	...	4
„ Jagat Bandhu Nág, Extra Assistant Commissioner, Sunámganj, Sylhet.	2	...	...	...	2
„ Ishán Chandra Patranavis, Extra Assistant Commissioner, Sylhet	11	...	...	...	11
„ Sarvánanda Dás, Extra Assistant Commissioner, Habiganj, Sylhet	3	...	...	...	3
„ Sambhu Náráyan Sinha, Extra Assistant Commissioner, Karimganj, Sylhet	3	...	...	...	3
„ Gaur Charan Dás, Extra Assistant Commissioner, Habiganj, Sylhet	1	1	1	...	3
„ Giris Chandra Nág, Sub-Deputy Collector, Maulvi Bázár, Sylhet.	3	...	...	...	3
„ Gopál Chandra Puri Bhuiyán, Sub-Deputy Collector, Sylhet ...	3	...	...	...	3
„ Purna Chandra Mitra, Sub-Deputy Collector, Karimganj	15	1	...	...	16

* Experiments in mustard were discontinued in 1889-90, as the results obtained up to that date were considered fairly reliable, but were started again in 1892-93 in consideration of its importance as a crop and the necessity of the quinquennial revision of the figures of outturn of all the principal crops prescribed by Circular No. 3—15, dated the 20th February 1892.

Name.	Rice.	Cane.	Mustard.	Miscellaneous crops.	Total.
Maulvi Muhammad Abdulla, Sub-Deputy Collector, Sunámganj, Sylhet	4	...	...	...	4
Babu Kási Chandra Guha, Sub-Registrar, Karimganj, Sylhet ...	5	...	...	...	5
„ Nibáran Chandra Mukherji, Tahsildár, Goálpára	17	...	...	...	17
„ Paramánanda Chaudhuri, „ Kámrúp	17	2	2	...	21
„ Gangá Rám Dás, „ „	11	...	...	4	15
„ Káli Rám Chaudhuri, „ „	6	1	1	...	8
„ Govinda Rám Chaudhuri, „ „	3	...	...	...	3
„ Banga Chandra Chaudhuri, „ „	6	...	...	...	6
„ Uday Chandra Baruá, „ „	5	...	1	3	9
„ Bansidhar Sarmá, „ „	4	1	1	...	6
„ Hareswar Datta, „ „	3	...	...	...	3
„ Rádhá Náth Baruá, „ „	2	...	...	...	2
„ Keshab Chandra Sinha, „ „	6	...	...	3	9
„ Ratna Kánta Baruá, „ „	2	1	2	...	5
Maulvi Muhammad Eunás Ali, „ „	8	6	...	...	14
Babu Syám Lál Chaudhuri, „ „	6	1	2	3	12
R. C. Hamilton, Esq., Assistant Commissioner, Tezpur	2	...	...	...	2
Babu Krishna Chandra Chaudhuri, Sub-Deputy Collector, Tezpur ...	...	3	...	...	3
„ Bhabáni Charan Sarma, Tahsildár, Darrang	2	...	...	...	2
„ Gangá Náth Sarmá, „ „	2	2	2	1	7
„ Rabi Charan Sarmá, „ „	...	4	...	...	4
„ Sánti Rám Házáriká, „ Nowgong	6	2	3	3	14
„ Jaynáth Saikiya, Acting, „ „	3	...	...	...	3
„ Chandra Kánta Baruá, „ „	1	1	...	...	2
„ Phanidhar Chaliha, Sub-Deputy Collector, Sibságar ...	2	1	...	...	3
„ Dámodhar Baruá, Tahsildár, Sibságar	3	...	...	...	3
Munshi Ázizar Rahmán, Extra Assistant Commissioner, Dibrugarh ...	1	...	...	...	1
„ Mashiat Ulla, Sub-Deputy Collector, Dibrugarh ...	8	2	...	...	10
Maulvi Muhammad Sádir, Sub-Deputy Collector, North Lakhimpur ...	2	...	...	...	2

N.B.—For explanation of the vernacular terms denoting the different species of crops where their English equivalents have not been given in this note, see paragraphs 3, 4, 5, and 6 of the Crop Note for 1889-90.

S. C. BÁNÁRJI,

Offg. Director, Department of Land Records and Agriculture, Assam.

Shillong,

15th June 1895.

ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

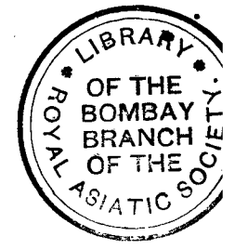
FOR

1895-96.

By

F. J. MONAHAN, Esq., I.C.S.,

OFFICIATING DIRECTOR, DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM.



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FROM

F. J. MONAHAN, ESQ., I.C.S.,

Offg. Director, Department of Land Records and Agriculture, Assam,

To

THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Shillong, the 3rd July 1896.

SIR,

I HAVE the honour to submit the Annual Note on Crop Experiments carried out in Assam during the year 1895-96.

I have the honour to be,

SIR,

Your most obedient Servant,

F. J. MONAHAN,

Offg. Director, Department of Land Records and Agriculture, Assam.

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ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

FOR

1895-96.

Nature of experiments.

Experiments were made during the year under report to ascertain the outturn of—

A.—Rice of various kinds.

B.—Sugarcane.

C.—Miscellaneous crops.

D.—Mustard.

The mauná has been taken at 82$\frac{2}{7}$lbs. and the *bighá* at one-third of an acre.

One steel yard for weighing crops experimented on was supplied during the year to the Subdivisional Officer, Sunámganj, at a cost of Rs. 36-4.

Number of experiments.

2. The statement below shows the number of experiments carried out in each district, as compared with the figures of the preceding year:

Number of Experiments.

Crop.	Cáchár.		Sylhet.		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Khási and Jaintia Hills.		Gáro Hills.		Total for the Province.	
	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.
Sáli ...	59	62	51	25	22	11	54	33	7	19	32	24	34	27	52	47	34	78	9	4	354	330
Ahu ...	18	18	9	7	40	5	60	17	...	4	81	35	10	19	34	24	90	42	4	14	346	185
Báo ...	14	2	38	40	3	...	25	16	...	...	12	2	...	...	...	...	...	...	...	...	92	60
Sálburá ...	...	...	13	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	10
Cane ...	12	10	8	6	2	1	12	19	9	...	22	16	17	14	33	35	...	...	...	...	115	101
Linseed ...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
Rapeseed ...	...	...	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3
Mung ...	...	...	...	...	...	...	10	16	...	...	3	...		...	...	...	...	...	...	...	13	16
Til ...	...	...	...	...	...	...	7	9	...	...	...	...	...	...	...	...	...	...	...	...	7	9
Cotton ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	8	9	8
Matikál i ...	4	5	...	...	7	7	11	15	4	7	23	31	12	9	32	31	...	...	...	...	93	105
Mustard ...	8	2	14	7	7	5	9	23	3	7	31	29	7	7	9	13	...	...	...	...	88	93
Potato ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	...	...	...	...	3	2
Total ...	115	99	135	103	81	29	188	148	23	37	204	137	80	76	163	152	124	120	22	26	1,135	927

There was a falling-off in the number of experiments effected during the year. More experiments might have been made with advantage in the Goálpára, Darrang, and Sibságar districts.

A.—RICE.

I.—Brahmaputra Valley.

Brahmaputra Valley rice experiments.

3. The three statements below give the results of the experiments made during the year with the three main varieties of rice grown in the districts of the Brahmaputra Valley :

Sáli.

—		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Total.	
		Bar dhán.	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*
Number of experiments.	1894-95	22	..	33	21	6	1	21	11	31	3	44	8	157	44
	1895-96	11	..	5	23	13	6	15	9	12	15	44	3	100	61
Total area cut, in acres.	1894-95	7·16	..	10·67	6·67	1·37	0·25	7·00	3·67	9·25	0·83	14·67	2·67	50·12	14·09
	1895-96	3·66	..	1·50	9·20	4·08	0·83	5·00	3·00	4·00	4·33	14·66	1·00	32·90	18·36
Total crop reaped, in lbs.	1894-95	13,639	..	18,115	9,559	2,719	555	12,787	5,636	6,844	1,189	25,041	4,076	79,145	21,015
	1895-96	6,611	..	1,862	12,158	4,869	1,234	8,697	3,960	5,050	5,151	21,143	1,434	48,242	23,937
Maximum per acre, in lbs.	1894-95	2,499	..	3,086	2,530	2,370	2,220	3,332	2,839	3,620	2,178	2,592	2,056	3,629	2,839
	1895-96	2,445	..	1,914	2,499	2,313	1,695	2,436	1,974	2,778	3,456	2,214	1,623	2,778	3,456
Minimum per acre, in lbs.	1894-95	1,018	..	845	864	1,092	2,220	586	173	482	556	691	1,061	432	173
	1895-96	1,017	..	216	258	288	1,080	474	351	549	525	833	1,221	216	258
Average per acre, in lbs.	1894-95	1,905	..	1,698	1,433	1,985	2,220	1,827	1,536	740	1,432	1,707	1,526	1,579	1,491
	1895-96	1,806	..	1,241	1,321	1,193	1,486	1,739	1,320	1,265	1,189	1,442	1,434	1,466	1,303

Áhu.

—		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
Number of experiments.	1894-95 ..	40	...	40	20	...	...	79	2	10	...	34	...	203	2
	1895-96 ...	5	...	11	6	2	2	32	3	19	...	24	...	93	11
Total area cut, in acres.	1894-95 ...	13·33	...	12·16	5·73	...	...	25·27	0·67	3·33	...	9·50	...	93·59	6·40
	1895-96 ...	1·66	...	3·66	1·46	0·16	0·16	10·66	1·00	6·33	...	8·00	...	30·47	2·62
Total crop reaped, in lbs.	1894-95 ...	22,655	...	10,990	6,495	..	..	33,807	815	2,047	...	12,262	...	81,761	7,310
	1895-96 ...	2,493	...	3,795	1,977	53	292	14,338	1,559	5,270	...	11,763	...	37,712	3,828
Maximum per acres, in lbs.	1894-95 ...	3,313	...	1,925	1,925	..	...	2,543	1,487	1,500	...	2,777	...	3,313	1,925
	1895-96 ...	2,418	...	1,695	1,764	372	1,776	2,307	1,776	2,271	...	2,775	...	2,775	1,776
Minimum per acre, in lbs.	1894-95 ...	864	..	264	259	..	..	309	957	265	..	185	..	185	259
	1895-96 ...	858	..	123	1,122	264	1,728	339	1,356	186	..	678	..	123	1,122
Average per acre, in lbs.	1894-95 ...	1,699	..	904	1,133	..	..	1,338	1,216	615	..	1,291	..	1,286	1,142
	1895-96 ...	1,502	..	1,037	1,35[illegible]	331	1,752	1,345	1,559	832	..	1,470	..	1,237	1,461

Báo.

		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
Number of experiments.	1894-95 ..	3	..	25	..	..	..	12	..	..	..	..	..	40	..
	1895-96 ..	..	..	14	2	..	..	2	..	..	..	..	..	16	2
Total area cut, in acres.	1894-95 ..	0·57	..	7·67	..	..	..	4·00	..	..	..	..	..	12·24	..
	1895-96 ..	..	..	4·13	0·66	..	..	0·66	..	..	..	..	..	4·79	0·66
Total crop reaped, in lbs.	1894-95 ..	827	..	7,858	..	..	..	4,559	..	..	..	..	..	13,244	..
	1895-96 ..	..	..	4,582	1,144	..	..	557	..	..	..	..	..	5,139	1,144
Maximum per acre, in lbs.	1894-95 ...	1,851	..	2,253	..	..	..	1,605	..	..	..	..	..	2,253	..
	1895-96 ..	..	..	2,004	1,752	..	..	840	..	..	..	..	..	2,004	1,752
Minimum per acre, in lbs.	1894-95 ..	420	..	290	..	..	..	370	..	..	..	..	..	290	..
	1895-96 ..	..	..	258	1,677	..	..	831	..	..	..	..	..	258	1,677
Average per acre, in lbs.	1894-95 ..	1,451	..	1,024	..	..	..	1,140	..	..	..	..	..	1,082	..
	1895-96 ..	..	..	1,109	1,733	..	..	844	..	..	..	..	..	1,073	1,733

Experiments in the two kinds of *sáli*, *viz.*, *bar dhán* and *láhi dhán*, number 3,958 up to the close of the year 1895-96. The total area cut is 1,276·97 acres, with a total outturn of 2,018,909lbs., and the average yield per acre amounts to 1,581lbs., or over 19 maunds.

During the eight years ending 1895-96, in which the results of experiments in the two kinds of *sáli* have been reported separately, 1,403 experiments have been made in *bar dhán*, of which 432·66 acres have been cut, the total outturn being 774,941lbs., and the average yield per acre 1,791lbs., or about 22 maunds. Four hundred and forty-two experiments have been made in *láhi dhán*, of which 135·77 acres have been cut. The total outturn is 173,335lbs., and the average per acre 1,276lbs., or 15½ maunds.

Áhu is sometimes transplanted, but is usually sown broadcast. The total number of experiments in *áhu dhán* (both transplanted and broadcast) up to date has been 1,959, the total area cut 658·41 acres, the total crop reaped 877,826lbs., and the average outturn per acre 1,333lbs., or a little over 16 maunds.

The total number of experiments with the two varieties of *báo dhán* (broadcast and transplanted) up to date has been 493, the total area cut 161·27 acres, and the total crop reaped 200,882 lbs.; the average outturn per acre is 1,245 lbs., or a little over 15 maunds.

II.—SYLHET.

4. The following statement gives details of the rice experiments made in Sylhet during the two years 1894-95 and 1895-96:

	Lowland *áus*.			Highland *áus*.						*Muopáli*.			*Sáil*.			Lowland *áman*.			Highland *áman*.						*Kátáriá*.			*Sálburá*.		
				Transplanted.			Broadcast.												Transplanted.			Broadcast.								
	In 1894-95.	In 1895-96.	Total of eight years ending 1895-96.	In 1894-95.	In 1895-96.	Total of eight years ending 1895-96.	In 1894-95.	In 1895-96.	Total of eight years ending 1895-96.	In 1894-95.	In 1895-96.	Total of eight years ending 1895-96.	In 1894-95.	In 1895-96.	Total of thirteen years ending 1895-96.	In 1894-95.	In 1895-96.	Total of eight years ending 1895-96.	In 1894-95.	In 1895-96.	Total of eight years ending 1895-96.	In 1894-95.	In 1895-96.	Total of eight years ending 1895-96.	In 1894-95.	In 1895-96.	Total of eight years ending 1895-96.	In 1894-95.	In 1895-96.	Total of thirteen years ending 1895-96.
Number of experiments	4	1	31	1	5	38	4	1	57	...	...	10	51	25	471	11	25	158	8	14	39	16	...	116	3	1	30	13	10	233
Total area cut, in acres	0·78	0·25	8·96	0·26	0·89	9·44	0·98	0·33	13·67	...	...	2·56	13·62	6·60	121·62	3·05	6·79	44·24	2·37	3·84	9·61	4·32	...	32·81	0·67	0·25	8·00	3·50	2·98	66·90
Total crop reaped, in lbs.	1,547	496	11,229	607	1,281	12,843	602	411	14,041	...	...	2,825	31,482	9,309	178,426	4,023	8,684	57,330	3,579	4,894	13,723	6,254	...	50,568	1,146	220	11,770	7,045	5,194	109,054
Maximum per acre, in lbs.	2,455	1,984	3,218	2,334	2,318	2,432	802	1,245	3,786	...	...	2,152	4,986	2,345	4,936	1,944	3,632	2,668	2,468	1,851	2,468	2,216	...	7,808	2,200	880	2,200	3,017	2,546	4,363
Minimum per acre, in lbs.	1,705	1,984	360	2,334	1,110	480	401	1,245	204	...	...	420	153	495	159	617	247	247	477	528	477	750	...	198	1,071	880	808	1,474	1,160	240
Average per acre, in lbs.	1,983	1,984	1,253	2,334	1,439	1,360	614	1,245	1,027	...	...	1,104	2,311	1,410	1,467	1,327	1,279	1,296	1,510	1,274	1,428	1,447	...	1,539	1,710	880	1,472	2,012	1,743	1,630

In *sáil* and *sáilburá* the total number of experiments made up to date is 481, the area cut being 124·60 acres, crop reaped 183,620 lbs., and the average outturn 1,473 lbs., or a little below 18 maunds.

There have been 630 experiments in the varieties, highland and lowland *áman*, and *kátáriá*. The area cut is 170·33 acres, the crop reaped 253,102 lbs., and the average outturn 1,486 lbs., or a little over 18 maunds.

Three hundred and thirty-three experiments with early rice (*áus* and *muráli*) have up to date been made in Sylhet, the total area cut being 86·53 acres, the total crop reaped 99,334 lbs., and the average outturn per acre 1,148 lbs., or a little below 14 maunds.

III.—Cáchár.

5. The results of experiments made in the principal varieties of rice known in Cachar are given in the following statement:

Cáchár rice experiments.

	Dumái.			*Muráli.*					*Asra.*			*Sáil.*		
				1894-95.		1895-96.								
	1894-95.	1895-96.	Total of eight years ending 1895-96.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Total of eight years ending 1895-96.	1894-95.	1895-96.	Total of eight years ending 1895-96.	1894-95.	1895-96.	Total of thirteen years ending 1895-96.
Number of experiments ...	3	4	22	10	5	7	7	60	14	2	33	59	62	267
Total area cut, in acres ...	1·00	1·16	6·33	2·68	1·51	1·83	1·83	16·67	4·67	0·66	10·47	19·66	20·66	81·79
Total crop reaped, in lbs. ...	7[illegible]0	900	6,09[illegible]	4,693	1,813	1,813	1,759	20,181	7,4[illegible]3	1,20[illegible]	14,241	31,425	29,253	129,595
Maximum per acre, in lbs.	1,476	1,068	1,560	2,877	1,512	1,692	1,296	2,877	2,511	1,974	2,511	2,53[illegible]	2,766	3,2[illegible]0
Minimum per acre, in lbs.	402	3[illegible]4	384	975	924	726	642	451	[illegible]19	1,650	606	618	462	462
Average per acre, in lbs. ...	790	776	963	1,750	1,201	991	961	1,211	1,589	1,830	1,3[illegible]0	1,599	1,416	1,584

The total number of experiments made up to date with *dumái* and *muráli* is 144, the total area cut being 38·50 acres, the total crop reaped 46,318 lbs., and the average outturn per acre 1,203 lbs., or a little over 14½ maunds.

Thirty-three experiments with *asra* have been made up to date, the total area cut being 10·47 acres, the total crop reaped 14,241 lbs., and the average outturn per acre 1,360 lbs., or a little over 16½ maunds.

Experiments in *sáil* up to the close of the year 1895-96 number 267. The total area cut is 81·79 acres with a total outturn of 129,595 lbs., and the average yield per acre amounts to 1,584 lbs., or a little over 19 maunds.

IV.—Hill Rice Experiments.

6. The statements below show the results of the rice experiments made in the Khási and Jaintia and Gáro Hills districts during the year under report:

Hill rice experiments.

Khási and Jaintia Hills.

	Upland rice.			Lowland rice.		
	1894-95.	1895-96.	Total (14 years) ending 1895-96.	1894-95.	1895-96.	Total (14 years) ending 1895-96.
Number of experiments	90	42	629	34	78	739
Total area cut, in acres	30·00	14·00	168·30	11·33	26·00	195·01
Total crop reaped, in lbs.	28,858	13,305	1,30,553	6,688	28,393	184,377
Maximum per acre „	2,129	1,356	2,264	1,481	1,851	3,400
Minimum „ „	370	489	40	247	462	192
Average „ „	962	950	776	590	1,092	945

Gáro Hills.

	Ásu.			*Sáli.*		
	1894-95.	1895-96.	Total (14 years) ending 1895-96.	1894-95.	1895-96.	Total (14 years) ending 1895-96.
Number of experiments	4	14	111	9	4	29
Total area cut, in acres	1·33	3·92	35·05	3·00	0·58	8·89
Total crop reaped, in lbs.	2,495	4,600	34,227	4,011	1,127	13,726
Maximum per acre „	2,480	1,623	2,480	1,685	2,220	2,730
Minimum „ „	1,222	678	160	962	987	738
Average „ „	1,876	1,173	976	1,337	1,943	1,544

B.—SUGARCANE.

7. The following statement shows the results of experiments made by tahsildárs and officers above that rank:

Experiments by superior officers.

District.	Number of experiments.		Total area, in acres.		Total weight of cane, in lbs.		Total weight of juice, in lbs.		Total weight of *gur*, in lbs.		Weight of *gur* per acre, in lbs.		Pounds of juice per 100 lbs. of cane.		Pounds of *gur* per 100 lbs. of cane.		Pounds of *gur* per 100 lbs. of juice.	
	1894-95.	1895-96.	1895-96.	1894-95.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.
Cachar	1	..	0·11	..	2,514	..	1,285	..	179	..	1,627	..	51·11	..	7·12	..	13·93	..
Sylhet	3	1	0·14	0·07	3,950	493	2,277	216	306	24	2,186	343	57·64	43·81	7·74	4·87	13·43	11·11
Total Surma Valley	4	1	0·25	0·07	6,464	493	3,562	216	485	24	1,940	343	55·10	43·81	7·50	4·87	13·61	11·11
Kámrúp	12	11	1·55	0·73	52,773	12,820	17,216	4,723	4,433	952	2,861	1,304	32·01	36·84	8·24	7·42	25·76	20·14
Dárrang	9	..	0·37	..	7,364	..	3,737	..	660	..	1,783	..	50·75	..	8·96	..	17·66	..
Nowgong	3	2	0·33	0·13	7,290	2,081	3,065	794	349	138	1,057	1,061	42·56	33·15	4·85	6·63	11·38	17·38
Sibságar	1	..	0·06	..	1,100	..	961	..	123	..	1,537	..	87·36	..	11·18	..	12·79	..
Lakhimpur	2	3	0·13	0·22	2,746	5,760	1,423	3,302	247	574	1,900	2,609	51·82	57·32	8·99	9·96	17·35	17·38
Total Brahmaputra Valley	27	16	2·44	1·08	72,183	20,661	26,402	8,819	5,814	1,664	2,382	1,540	36·57	42·68	8·05	8·05	22·02	18·87
Total for the province	31	17	2·69	1·15	78,647	21,154	29,964	9,035	6,299	1,688	2,341	1,468	38·09	42·71	8·00	7·98	21·02	18·68
Total for 1893-94	30		2,975		54,712		21,958		2,968		998		40·13		5·42		13·51	
„ 1892-93	13		1·37		34,180		13,148		2,342		1,709		38·47		6·85		17·81	
„ 1891-92	6		1·06		6,490		3,564		730		688		54·91		11·42		20·48	
„ 1890-91	8		0·57		10,486		5,711		891		1,563		54·46		8·49		15·60	
„ 1889-90	30		2·45		45,789		21,691		2,611		1,065		47·37		5·70		12·03	
„ 1888-89	24		3·64		52,623		27,204		4,472		1,228		51·69		8·49		16·43	
„ 1887-88	13		2·36		59,946		32,504		5,782		2,450		54·22		9·65		17·79	
„ 1886-87	24		4·97		98,654		51,158		6,594		1,326		51·85		6·63		12·88	
„ 1885-86	15		2·37		60,419		28,013		4,611		1,962		46·36		7·63		16·46	
„ 1884-85	16		1·07		23,891		12,310		2,529		2,350		42·60		8·76		20·50	
„ 1883-84	20		....		96,373		38,111		7,889		....		39·50		8·18		20·70	
Total	247		26·675		648,364		294,371		49,406		1,556		45·49		7·62		16·78	

Mauzádárs' experiments.

8. The statement below gives details of experiments made by mauzádárs and subordinate police officers:

District.	Number of experiments.		Total area, in acres.		Total weight of cane, in lbs.		Total weight of juice, in lbs.		Total weight of *gur*, in lbs.		Weight of *gur* per acre, in lbs.		Pounds of juice per 100 lbs. of cane.		Pounds of *gur* per 100 lbs. of cane		Pounds of *gur* per 100 lbs. of juice.	
	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.
Cachár	11	10	0·73	2·30	9,448	5,406	5,789	2,708	893	481	1,223	209	61·27	50·09	9·45	8·89	15·42	17·76
Sylhet	5	5	0·33	0·42	23,278	19,876	13,094	7,568	1,934	1,074	5,860	2,557	56·25	38·07	8·30	5·40	14·77	14·19
Total Surma Valley ...	16	15	1·06	2·72	32,726	25,282	18,883	10,276	2,827	1,555	2,667	572	57·70	40·64	8·64	6·15	14·44	15·13
Goálpára	2	1	0·28	0·07	6,140	493	3,370	164	786	41	2,807	585	54·88	33·26	12·80	8·32	23·32	25·00
Kámrúp	..	8	..	0·63	..	13,225	...	6,165	..	977	..	1,551	..	46·61	..	7·54	..	16·17
Nowgong	19	14	1·40	1·00	14,667	10,796	7,755	4,616	1,069	773	763	773	52·87	42·77	7·28	7·16	13·78	16·74
Sibságar	16	14	0·85	1·10	24,459	21,213	13,063	10,469	1,502	1,901	1,767	1,728	53·40	49·31	6·14	8·96	11·49	18·15
Lakhimpur	31	32	1·07	2·13	33,023	47,544	17,576	24,960	4,077	5,046	3,810	2,369	53·22	52·50	12·34	10·61	23·19	20·21
Total Brahmaputra Valley	68	69	3·60	4·93	78,289	93,271	41,764	46,374	7,434	8,738	2,065	1,772	53·34	49·72	9·49	9·37	17·80	18·84
Total for the province	84	84	4·66	7·65	111,015	118,553	60,647	56,650	10,261	10,293	2,201	1,345	54·62	47·78	9·24	8·68	16·91	18·17
Total for 1893-94 ...	86		7·78		162,695		52,324		8,557		1,100		50·95		8·33		16·35	
„ 1892-93 ...	79		4·95		86,816		41,976		8,370		1,691		48·35		9·64		19·94	
„ 1891-92 ...	89		9·93		134,270		68,500		12,734		1,282		51·01		9·48		18·59	
„ 1890-91 ...	113		8·75		154,247		75,891		13,709		1,566		49·20		8·88		18·06	
„ 1889-90 ...	101		11·73		182,400		84,873		14,014		1,194		46·53		7·68		16·51	
„ 1888-89 ...	126		11·83		193,057		93,272		16,787		1,419		48·31		8·69		17·99	
„ 1887-88 ...	135		18·90		286,466		139,159		24,717		1,307		48·58		8·60		17·80	
„ 1886-87 ...	104		19·03		341,112		157,705		27,843		1,463		50·69		8·94		17·65	
„ 1885-86 ...	78		13·68		310,187		127,636		21,548		1,575		41·15		6·95		16·88	
„ 1884-85 ...	135		19·52		426,957		194,423		33,172		1,699		45·54		7·70		17·09	
„ 1883-84 ...	60		..		113,956		59,048		11,081		..		51·81		9·70		17·00	
	1,274		138·41		2,531,731		1,212,109		213,086		1,459		47·87		8·42		17·58	

Net results.

9. The net result of all experiments made up to date with sugar-cane is given below:

(*a*) From superior officers' experiments—

(1) The weight of *gúr* (molasses) per acre is 1,556 lbs.

(2) Cane yields 45·40 per cent. of its weight of juice and 7·62 of its weight of *gur* (molasses)

(3) The juice yields 16·78 per cent. of its weight of *gur* (molasses).

(*b*) From inferior officers' experiments—

(1) The weight of *gur* (molasses) per acre is 1,459 lbs.

(2) Cane yields 47·87 per cent. of its weight of juice and 8·42 per cent. of its weight of *gur*. (molasses).

(3) The juice yields 17·58 per cent. of its weight of *gur* (molasses).

(*c*) From all experiments combined—

(1) The weight of *gur* (molasses) per acre is 1,475 lbs.

(2) Cane yields 47·37 per cent. of its weight of juice, and 8·25 per cent. of its weight of *gur* (molasses).

(3) The juice yields 17·42 per cent. of its weight of *gur* (molasses).

C.—MISCELLANEOUS CROPS.

10. The following statement gives the results of the experiments made up to date with *máthkalái* (phaseolus mungo, var. radiatus), *mung* (phaseolus mungo), rapeseed, linseed, *til* (sesamum), cotton, and potatoes:

Miscellaneous crops.

	Matikalai (phaseolus mungo, var. radiatus)																		*Mung* (phaseolus mungo).					
	Cáchár.		Sylhet.		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Total up to the end of		Kámrúp.		Nowgong.		Total up to the end of	
	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.
Number of experiments ...	4	5	...	...	7	7	11	15	4	7	23	31	12	9	32	31	1,729	1,834	10	16	3	...	123	139
Total area experimented upon, in acres.	1·33	1·50	...	...	2·30	2·33	2·06	4·66	0·82	1·58	7·67	10·33	2·92	2·32	10·67	10·33	58·54	91·59	1·93	4·91	1·00	...	25·62	30·53
Total crop gathered, in lbs. ...	164	671	...	...	849	1,072	499	1,042	210	541	3,164	4,182	1,310	1,354	6,036	6,254	26,694	41,810	555	1,038	2·30	...	9,257	10,295
Maximum per acre, in lbs. ...	216	711	...	...	617	741	518	678	309	612	666	771	938	1,326	975	1,068	2,100	2,100	599	369	401	...	840	840
Minimum per acre, in lbs. ...	24	234	...	...	25	198	62	93	234	93	173	63	154	169	74	186	18	18	154	54	136	...	42	42
Average per acre, in lbs. ...	123	447	...	...	369	460	242	223	256	342	412	405	448	584	566	605	456	457	288	211	230	...	361	337

	Rapeseed.				Linseed.				*Til* (Sesamum).				Cotton.				Potato.			
	Sylhet.		Total up to the end of		Sylhet.		Total up to the end of		Kámrúp.		Total up to the end of		Gáro Hills.		Total up to the end of		Lakhimpur.		Total up to the end of	
	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.
Number of experiments ...	2	3	26	29	...	5	21	26	7	9	85	94	9	8	20	28	3	2	5	7
Total area experimented upon, in acres.	0·15	0·90	13·65	14·55	...	1·20	3·86	5·06	0·97	2·55	23·71	26·26	3·00	2·66	7·41	10·07	1·00	0·66	1·13	1·79
Total crop gathered, in lbs. ...	35	385	4,637	5,022	...	605	1,241	1,846	273	744	6,657	7,401	547	513	1,900	2,422	3,810	714	4,040	4,754
Maximum per acre, in lbs. ...	300	543	1,028	1,028	...	649	4,020	4,020	407	492	1,058	1,058	302	468	885	885	6,171	1,158	6,171	6,171
Minimum per acre, in lbs. ...	164	288	36	36	...	344	150	150	46	60	46	46	62	105	62	62	1,296	981	1,296	981
Average per acre, in lbs. ...	233	428	339	345	...	504	321	365	280	291	280	282	182	192	257	240	3,810	1,082	3,575	2,656

Experiments in the potato crop in the Khási and Jaintia Hills have now been prescribed, and it is hoped that some experiments will be made in the current year in that crop, which is of considerable local importance.

D.—MUSTARD.

Mustard experiments.

11. The statement below gives the results of the experiments in mustard seed carried out during each of the two years 1894-95 and 1895-96:

D.—MUSTARD.

Experiments.	Cáchár.		Sylhet.		Total Surma Valley.		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Total Brahmaputra Valley.		Total for the province.		Total for the province up to end of	
	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.
Number of experiments	8	2	14	7	22	9	7	5	9	23	3	7	31	29	7	7	9	13	66	84	88	93	1,948	2,041
Total area experimented upon, in acres	2·67	0·50	3·30	2·0	5·97	2·50	2·33	1·66	2·67	7·21	1·00	1·53	10·33	9·66	1·48	1·90	3·00	4·33	20·81	26·32	26·78	28·82	653·39	682·71
Total crop gathered, in lbs.	706	138	1,543	827	2,249	965	987	905	1,226	4,406	576	874	5,784	5,133	761	1,159	2,653	4,762	11,987	17,233	14,236	18,198	328,419	346,617
Maximum per acre, in lbs.	414	309	1,132	771	1,132	771	574	729	1,573	1,554	802	1,110	1,320	1,173	1,160	1,296	1,191	1,665	1,573	1,665	1,573	1,665	2,100	2,100
Minimum per acre, in lbs.	123	216	204	93	123	93	271	369	21	183	358	309	185	105	185	246	463	462	21	105	21	93	21	21
Average per acre, in lbs.	264	276	467	413	377	386	424	545	459	611	576	560	560	532	514	605	884	1,099	576	655	532	631	502	507

Since experiments in mustard were resumed in 1892-93, there have been 342 such experiments in the Brahmaputra Valley, the total area cut being 102·30 acres, the total crop reaped 64,290 pounds, and the average outturn per acre 628 lbs., or a little over 7½ maunds. In the Surma Valley there have been 72 experiments, the area cut has been 19·26 acres, the total outturn 7,654 lbs., and the average yield per acre 397 lbs., or a little less than 5 maunds.

The average outturn of mustard per acre would appear to be considerably greater in the Brahmaputra Valley than in the Surma Valley. This may be due to the fact that in the former valley, the crop is usually raised on land which has not been under cultivation for more than three years, and which has not become exhausted.

GENERAL REMARKS.

Rejected experiments.

12. A number of experiments were rejected, because the area experimented on was over one *bighá* in the case of rice or mustard, or less than one-fifth of a *bighá* or over half a *bighá* in the case of sugarcane. Two experiments in cotton in the Gáro Hills were rejected, because the crop selected was an exceptionally good one. The following statement shows the number of rejected experiments in each district during the years 1894-95 and 1895-96:

District.	Rice.				Cane.				Mustard.				Miscellaneous crops.			
	Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.	
	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.	1894-95.	1895-96.
Cáchár	1	1	0·34	0·58	..	..	..	..	..	..	..	..	..	..	..	..
Sylhet	4	6	1·50	2·91	..	4	..	0·596	..	1	..	0·30	1	..	0·33	..
Goálpára	3	..	2·00	..	..	..	..	..	3	..	1·83	..	1	..	1·16	..
Kámrúp	2	..	1·33	..	..	1	..	0·33	..	..	..	..	..	..	..	..
Darrang	3	1	1·00	0·53	..	1	..	0·21	..	..	..	..	..	..	..	..
Nowgong	10	1	3·33	0·51	4	..	1·33	..	..	..	..	..	..	..	..	..
Sibságar	9	..	3·18	..	..	2	..	0·045	..	..	..	..	..	..	..	..
Lakhimpur	..	..	..	..	..	1	..	0·03	..	..	..	..	..	..	..	..
Gáro Hills	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	0·67
Khási and Jaintia Hills ...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	32	9	12·68	4·53	4	9	1·33	1·211	3	1	1·83	0·30	2	2	1·49	0·67

Experimenting officers.

13. The names of superior officers who conducted experiments are given in the statement below:

Name.	Rice.	Cane.	Mustard.	Miscellaneous crops.	Total.
G. Balthasar, Esq., Superintendent, Silchár Jail, Cáchár	1	...	...	...	1
W. J. Reid, Esq., Subdivisional Officer, South Sylhet, Sylhet ...	1	...	...	...	1
Bábu Ráj Mohan De, Subdivisional Officer, Habiganj, Sylhet ...	1	1	...	...	2
„ Jagat Bandhu Nág, Subdivisional Officer, Sunámganj, Sylhet ...	5	...	...	...	5
„ Isán Chandra Patranavis, Extra Assistant Commissioner, Sylhet	11	...	...	...	11
„ Sarat Chandra Mazumdar, Extra Assistant Commissioner, Karimganj, Sylhet.	1	...	...	...	1
„ Giris Chandra Nág, Officiating Extra Assistant Commissioner, Maulvi Bázár, Sylhet.	1	...	...	...	1
Maulvi Muhammad Ábdulla, Sub-Deputy Collector, Sunámganj, Sylhet	5	...	...	...	5
Bábu Purna Chandra Mitra, Sub-Deputy Collector, Karimganj, Sylhet	10	...	...	...	10
„ Kási Chandra Guha, Sub-Registrar, Karimganj, Sylhet ...	3	...	...	...	3
„ Tripura Charan Mukherji, Sub-Deputy Collector, Goálpára ...	1	...	1	...	2
Rái Mádhab Chandra Bardalai, Báhádur, Subdivisional Officer, Barpeta, Kámrúp.	3	...	...	...	3

Name.	Rice.	Cane.	Mustard.	Miscellaneous crops.	Total.
Munshi Muhammad Eunás Áli, Tahsildár, Kámrúp	5	2	...	...	7
Bábu Ganga Rám Dás, „ „	8	3	1	4	16
„ Bansidhar Sarma Barua, „ „	2	1	1	2	6
„ Rádha Náth Barua, „ „	1	...	1	...	2
„ Káli Rám Chaudhuri, „ „	3	1	...	...	4
„ Chini Rám Dás, „ „	1	...	...	...	1
„ Syám Lál Chaudhuri, „ „	2	2	2	3	9
„ Ratna Kánta Barua, „ „	13	1	2	3	19
„ Banga Chandra Chaudhuri, „ „	3	...	3	2	8
„ Jay Rám Deka, „ „	2	1	1	3	7
Lieutenant-Colonel M. A. Gray, Deputy Commissianer, Darrang ...	1	...	...	...	1
Babu Rabi Charan Sarma, Tahsildár, Darrang	3	...	...	2	5
„ Ganga Náth Sarma, „ „	3	...	1	1	5
„ Bhabani Charan Sarma, „ „	2	...	1	1	4
„ Sita Náth Saharia, „ „	...	...	1	...	1
„ Rádha Mohan Dás, Sub-Deputy Collector, Nowgong ...	...	...	1	...	1
„ Rudra Náth Barua, Tahsildár, Nowgong	1	1	...	1	3
„ Chandra Kánta Barua, „ „	3	...	1	1	5
„ Sánti Rám Házárika, „ „	6	1	2	3	12
„ Ráj Kumár Ray, Sub-Deputy Collector, Sibságar	1	...	...	...	1
„ Durga Prasád Barua, Tahsildár, Sibságar	2	...	...	...	2
„ Someswar Sarma Barua, „ „	1	...	...	...	1
H. C. Barnes, Esq., Assistant Commissioner, Dibrugarh	...	1	...	...	1
R. C. Hamilton, Esq., Subdivisional Officer, North Lakhimpur ...	...	...	1	...	1
Munshi Ázizar Rahmán, Extra Assistant Commissioner, Dibrugarh ...	...	1	...	...	1
„ Mashiat Ulla, Sub-Deputy Collector, Dibrugarh	8	1	...	...	9
Maulvi Muhammad Sádir, Sub-Deputy Collector, North Lakhimpur ...	1	...	...	...	1
S. E. Rita, Esq., Subdivisional Officer, Jowái, Khási and Jaintia Hills	50	...	...	...	50

N.B.—For explanation of the vernacular terms denoting the different species of crops where their English equivalents have not been given in this Note, see paragraphs 3, 4, 5, and 6 of the Crop Note for 1889-90.

F. J. MONAHAN,

Offg. Director, Department of Land Records and Agriculture, Assam.

Shillong,
The 3rd July 1896.

A. S. P. O. (Rev.) 183—340—26-8-96.

ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

FOR

1896-97.

BY

F. J. MONAHAN, Esq., I.C.S.,
OFFICIATING DIRECTOR, DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM.

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ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

FOR

1896-97.

Nature of experiments.

Experiments were made as usual during the year to ascertain the outturn of—

A.—Rice of various kinds.

B.—Sugarcane.

C.—Miscellaneous crops.

D.—Mustard.

In estimating the outturn of crops, the maund has been taken at 82⅔ lbs. and the *bighá* at one-third of an acre.

Number of experiments.

2. The following statement shows the number of experiments carried out in each district, as compared with the figures of the preceding year:—

Number of Experiments.

Crops.	Cáchár.		Sylhet.		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Khási and Jaintia Hills.		Gáro Hills.		Total for the Province.	
	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96	1896-97.
Sáli	62	67	25	28	11	26	33	20	19	11	24	17	27	26	47	36	78	78	4	4	330	313
Áhu	18	8	7	4	5	4	17	12	4	...	35	15	19	3	24	26	42	38	14	11	185	121
Báo	2	3	40	46	...	...	16	15	...	...	2	3	...	...	...	...	...	...	...	...	60	67
Sáilburá	...	...	10	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	3
Cane	10	10	6	7	1	3	19	15	...	1	16	4	14	6	35	24	...	...	...	...	101	70
Linseed	...	...	5	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	4
Rapeseed	...	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1
Mung	...	...	...	...	...	...	16	6	...	...	...	...	...	...	...	...	...	...	...	...	16	6
Til	...	...	...	...	...	...	9	7	...	...	...	...	...	...	...	...	...	...	...	...	9	7
Cotton	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	10	8	10
Mátikáldi	5	5	...	...	7	1	15	11	7	9	31	16	9	7	31	35	...	...	...	...	105	84
Mustard	2	9	7	11	5	12	23	20	7	8	29	15	7	5	13	15	...	...	...	...	93	95
Potato	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2	...
TOTAL	99	102	103	104	29	46	148	106	37	29	137	70	76	47	152	136	120	116	26	25	927	781

There was a falling off in the number of experiments effected during the year in all the districts of the Brahmaputra Valley, except Goálpára ; the number carried out in the Darrang and Sibságar Districts was specially deficient.

Results of experiments.

3. The Statements, I to X, annexed, compare the results of experiments made with the different crops in the two years 1895-96 and 1896-97; they also exhibit the aggregate results of all experiments made with each crop up to the close of the latter year.

A.—RICE (*Statements I to V.*)

Rice experiments.

4. The figures of outturn shown under this head represent the yield of unhusked rice.

I.—Brahmaputra Valley (*Statements I, II and III*).

Brahmaputra Valley rice experiments.

Sáli, late transplanted rice, is the most important crop grown in the Brahmaputra Valley, and it is also that with which the largest number of experiments (4,094) have been made. According to the results of these experiments, the average yield of the crop per acre is a little over 19 maunds. The results of experiments with the two varieties of *sali, viz., bar dhán* and *láhi dhán*, have been separately recorded for the past nine years only, and can hardly be considered a trustworthy index of the comparative productiveness of the two varieties. They agree, however, with what is generally known, *i.e.*, that *bar dhán* is much more prolific than the finer variety, *láhi dhán*, the average outturns given being for the former 21½ maunds, and for the latter 15½ maunds per acre.

The average outturn of *áhu* (early rice) given by the results of experiments made up to date, is a little over 16 maunds per acre, and that of *báo* (late rice grown on lowlands) a little over 15 maunds. The average for rice of all kinds grown in the valley is nearly 18 maunds per acre.

II.—Sylhet (*Statement IV*).

Sylhet rice experiments.

The *sáil* crop of Sylhet corresponds to *sáli* in the Brahmaputra Valley. The experiments made with it up to date give an average outturn of over 17 maunds per acre. Only 499 such experiments, however, have been made, and it is probable that this outturn may be below the real average.

Sáilburá, corresponding to the *boro dhán* of Bengal, is a prolific crop, giving an outturn of nearly 20 maunds per acre which is only inferior to that of *bar dhán* in the Brahmaputra Valley.

The experiments made with early rice (*áus* and *muráli*) give an average outturn of about 14½ maunds per acre, and those made with the varieties of highland and lowland *áman* and *kátáriá* a little below 17 maunds per acre. The average outturn of all kinds of rice grown in Sylhet resulting from experiments made up to date is over 17 maunds per acre.

III.—Cáchár (*Statement V*).

Cachar rice experiments.

The experiments made in this district have been too few in number to admit of any safe conclusions being drawn from them. They give an average outturn for *sáil* of 17 maunds per acre, for *dumái* and *muráli* (early rice) of 13½ maunds, for *ásrá* (corresponding to *áman* in Sylhet and *báo* in the Brahmaputra Valley) of a little over 16 maunds, and for all rice grown in the district of about 16½ maunds.

Hill Rice (*Statements VI and VII*).

Hill rice experiments.

5. The figures in Statement VI would seem to show that the varieties of rice raised in the Khasi and Jaintia Hills are less productive than those grown in the plains, the average outturn for the district being a little over 10½ maunds an acre only. The figures shown against the Garo Hills in Statement VII include the results of experiments made in the plains portion of the district.

Outturn and consumption of rice.

6. I have received from Mr. Kershaw, Assistant Commissioner of Golaghat, a memorandum, printed as an appendix to this note, in which the total production of rice in the plains districts of the Province, as calculated from the statistics of the area under rice for the year 1895-96 and the average outturn arrived at by experiments, is compared with the estimated total consumption and the statistics showing the net imports or exports of rice for the same year.

The accuracy of some of the *data* employed in the calculation is necessarily open to doubt. The results obtained, however, though they can only be regarded as affording rough indications of the approximate total production and consumption of rice in the province, are interesting so far as they go, and support the general reliability of the published crop statistics and of the recorded average outturns obtained from crop experiments. In the absence of accurate statistics, the figures arrived at by Mr. Kershaw's method of calculation, 1,800,000 acres, may be taken as the best estimate which can be made of the area cropped with rice in the Surma Valley.

B.—SUGARCANE (*Statement VIII*).

Sugarcane experiments.

7. The experiments which have been made with this crop, numbering 1,591 up to date, should afford fairly reliable data for an estimate of the average outturn.

They give the following results :—

(1) The average weight of *gur* (molasses) per acre is 1,500 lbs. or a little over 18 maunds.

(2) Cane yields 47·02 per cent. of its weight of juice and 8·26 per cent. of its weight of *gur*.

(3) The juice yields 17·57 per cent. of its weight of *gur*.

As the average local wholesale price of *gur* is not less than Rs. 6 a maund in any part of the Province, it is evident that sugarcane is a very profitable crop to the cultivator.

C.—MISCELLANEOUS CROPS (*Statement IX*).

8. It is matter for regret that no experiments were made during the year with potatoes in the Khási and Jaintia Hills, or with jute in Sylhet or Goálpára.

D.—MUSTARD (*Statement X*).

9. Since experiments with mustard were resumed in 1892-93, there have been 417 such experiments in the Brahmaputra Valley, the total area cut being 127·13 acres, the total crop gathered 77,164 lbs., and the average outturn per acre 607 lbs., or a little below 7½ maunds. In the Surma Valley, there have been 92 experiments, the total area cut has been 24·85 acres, the total outturn 10,084 lbs., and the average yield per acre 405 lbs., or a little less than 5 maunds.

GENERAL REMARKS.

Rejected experiments.

10. A number of reports of experiments made during the year have been rejected, because the area experimented on was over one *bighá*, in the case of rice, or mustard, or less than one-fifth of a *bighá* or over half a *bighá*, in the case of sugarcane.

Some experiments which gave apparently impossible results have also been rejected. The following statement shows the number of experiments made in each district which were rejected during the years 1895-96 and 1896-97 :—

District.	Rice.				Cane.				Mustard.				Miscellaneous crops.			
	Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.	
	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.
Cáchár	1	...	0·58	...	...	...	...	...	...	...	...	...	...	...	...	...
Sylhet	6	35	2·91	11·60	4	1	0·596	0·005	1	1	0·30	0·33	...	...	...	...
Goálpára	...	...	...	...	...	1	...	0·16	...	...	...	...	...	...	...	...
Kámrúp	...	...	...	...	1	...	0·33	...	...	...	...	...	...	...	...	...
Darrang	1	6	0·53	2·67	1	4	0·21	1·06	...	...	...	...	...	...	...	...
Nowgong	1	...	0·51	...	...	...	...	...	...	...	...	...	...	...	...	...
Sibságar	...	...	...	...	2	1	0·045	0·33	...	...	...	...	...	...	...	...
Lakhimpur	...	...	...	...	1	...	0·03	...	...	...	...	...	...	...	...	...
Gáro Hills	...	...	...	...	...	...	...	...	...	...	...	...	2	...	0·67	...
Khási and Jaintia Hills	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	9	41	4·53	14·27	9	7	1·211	1·555	1	1	0·30	0·33	2	...	0·67	...

11. The names of the superior officers who conducted experiments during the year are given in the statement below :—

Experimenting officers.

NAME.	Rice.	Cane.	Mustard.	Miscellaneous crops.	TOTAL.
Babu Jagat Chandra Dás, Extra Assistant Commissioner, Silchár, Cáchár.	1	...	...	...	1
Babu Nritya Gopal Chatterji, Extra Assistant Commissioner, Silchár, Cáchár.	2	...	...	...	2
F. S. R. Anley, Esq., Extra Assistant Commissioner, Silchár, Cáchár .	2	...	...	...	2
J. A. Ezechiel, Esq., Assistant Commissioner, Karimganj, Sylhet . .	1	...	...	...	1
Babu Jagat Bandhu Nag, Sub-Divisional Officer, Sunámgunj, Sylhet .	2	...	...	...	2
Mr. Manmatha Nath Ghosh, Extra Assistant Commissioner, Habiganj, Sylhet.	3	...	...	...	3
Babu Gour Charan Dás, Extra Assistant Commissioner, Habigunj, Sylhet	2	...	...	...	2
Babu Gris Chandra Nág, Extra Assistant Commissioner, Sunámgunj Sylhet.	1	...	...	...	1
Maulvi Muhammad Abdulla, Sub-Deputy Collector, Moulvi Bazar, Syhlet	4	3	...	...	7
Babu Tripura Charan Mukherji, Sub-Deputy Collector, Karimganj, Sylhet	6	...	...	...	6
„ Ram Tarak Rai Barman, Sub-Registrar, Karimganj, Sylhet .	1	...	...	...	1
A. G. Halifax, Esq., Deputy Commissioner, Dhubri, Goálpára . .	3	...	...	...	3
F. M. H. Jolly, Esq., Extra Assistant Commissioner, Dhubri, Goálpára .	4	...	...	...	4
Babu Nibaran Chandra Mukherji, Tahsildár, Goálpára . . .	4	...	...	...	4
Munshi Faizuddin Ahmed, Probationer Sub-Deputy Collector . .	2	2	4	...	8
Babu Bhola Nath Dás, Sub-Deputy Collector, Gauháti, Kámrúp . .	1	...	...	...	1
Munshi Muhammad Eunás Ali, Tahsildár, „ „ . .	15	7	7	...	29
Babu Bangsidhar Sarma Barua, „ „ „ . .	1	...	...	1	2
„ Kali Ram Chaudhuri, „ „ „ . .	1	1	...	...	2
„ Jay Rám Deka, „ „ „ . .	2	1	1	2	6
„ Banga Chandra Chaudhuri, „ „ „ . .	6	1	1	2	10
„ Ganga Nath Sarma, Tahsildár, Darrang	2	1	1	1	5
„ Rabi Charan Sarma, „ „	...	...	2	2	4
„ Bhabani Charan Sarma, „ „	1	...	...	...	1
C. G. M. Kennedy, Esq., Deputy Commissioner, Nowgong . . .	1	1	...	...	2
G. Balthasar, Esq., Assistant Commissioner, Nowgong . . .	1	...	...	...	1
Babu Chandra Kánta Barua, Tahsildár, Nowgong	1	...	...	...	1
„ Sánti Rám Házárika, „ „	5	...	...	2	7
„ Ráj Kumár Ray, Sub-Deputy Collector, Sibságar . . .	4	...	...	...	4
„ Guru Prasad Kakati, Tahsildár, Sibságar	2	...	...	...	2
„ Ratnadhur Barua, „ „	3	...	...	1	4
„ Durga Prasád Barua, „ „	2	1	1	...	4
„ Bishnu Rám Barua, „ „	1	1	...	...	2
H. C. Barnes, Esq., Assistant Commissioner, Dibrugarh, Lakhimpur .	...	1	...	...	1
Maulvi Muhammad Sádir, Sub-Deputy Collector, North Lakhimpur, Lakhimpur.	2	...	...	...	2
Babu Padma Nath Barua, Tahsildár, Lakhimpur	5	...	1	4	10

N. B.—For explanation of the vernacular terms denoting the different species of crops where their English equivalents have not been given in this note, see paragraphs 3, 4, 5 and 6 of the Crop Note for 1889-90.

F. J. MONAHAN,
Offg. Director of Land Records and Agriculture, Assam.

SHILLONG;
The 8th July 1897.

APPENDICES.

Appendix A.

STATEMENT I.

Sáli.

		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Total.	
		Bar dhán.	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*	*Bar dhán.*	*Láhi dhán.*
Number of experiments.	1895-96	11	...	5	28	13	6	15	9	12	15	44	3	100	61
	1896-97	26	...	5	15	11	...	15	2	17	9	34	2	108	28
Total area cut, in acres.	1895-96	8·66	...	1·50	9·20	4·08	0·83	5·00	3·00	4·00	4·33	14·66	1·00	32·90	18·36
	1896-97	8·67	...	1·67	5·00	3·08	...	5·00	0·66	5·67	3·00	11·33	0·66	35·42	9·32
Total crop reaped, in lbs.	1895-96	6,611	...	1,862	12,158	4,869	1,234	8,697	3,960	5,060	5,151	21,143	1,434	48,242	23,937
	1896-97	16,902	...	2,355	5,667	4,929	...	4,573	137	8,549	3,802	19,058	615	56,366	10,221
Maximum per acre, in lbs.	1895-96	2,445	...	1,914	2,499	2,313	1,695	2,436	1,974	2,778	3,456	2,214	1,623	2,778	3,456
	1896-97	3,084	...	1,818	1,389	2,499	...	1,851	258	2,067	1,688	2,457	957	3,084	1,683
Minimum per acre, in lbs.	1895-96	1,017	...	246	258	288	1,080	474	351	549	525	833	1,221	246	258
	1896-97	876	...	1,017	765	987	...	93	153	648	864	951	888	93	153
Average per acre, in lbs.	1895-96	1,806	...	1,241	1,321	1,193	1,486	1,739	1,320	1,265	1,189	1,442	1,434	1,466	1,303
	1896-97	1,949	...	1,410	1,133	1,600	...	914	207	1,508	1,267	1,682	922	1,591	1,09 6

Total number of experiments made up to the close of the year 1896-97 with *sáli dhán*	4,094
Total area cut, in acres	1,321·71
Total crop reaped, in lbs.	2,085,496
Average outturn per acre, in lbs.	1,578

For nine years, 1887-88 to 1896-97.

	Bar dhán.	*Láhi dhán.*
Total number of experiments made	1,511	470
Total area cut, in acres	468·08	145·09
Total crop reaped, in lbs.	831,307	183,556
Average outturn per acre, in lbs.	1,776	1,265

STATEMENT II.

Áhu.

		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
Number of experiments.	1895-96	5	...	11	6	2	2	32	3	19	...	24	...	93	11
	1896-97	4	...	11	1	...	...	15	...	3	...	26	...	59	1
Total area cut, in acres.	1895-96	1·66	...	3·66	1·46	0·16	0·16	10·66	1·00	6·33	...	8·00	...	30·47	2·62
	1896-97	1·33	...	3·67	0·33	...	...	5·00	...	1·00	...	8·66	...	19·66	0· 3
Total crop reaped, in lbs.	1895-96	2,493	...	3,795	1,977	53	292	14,338	1,559	5,270	...	11,763	...	37,712	3,828
	1896-97	2,266	...	4,071	238	...	...	6,005	...	638	...	13,019	...	25,999	238
Maximum per acre, in lbs.	1895-96	2,418	...	1,695	1,764	372	1,776	2,307	1,776	2,271	...	2,775	...	2,775	1,776
	1896-97	1,974	...	1,821	714	...	...	1,788	...	801	...	3,195	...	3,195	714
Minimum per acre, in lbs.	1895-96	858	...	123	1,122	264	1,728	339	1,356	186	...	678	...	123	1,122
	1896-97	1,464	...	525	714	...	...	555	...	525	...	735	...	525	714
Average per acre, in lbs.	1895-96	1,502	...	1,037	1,354	331	1,752	1,345	1,559	832	...	1,470	...	1,237	1,461
	1896-97	1,704	...	1,109	714	...	...	1,201	...	638	...	1,503	...	1,322	714

Total number of experiments made up to the close of the year 1896-97 with *áhudhán*	2,019
Total area cut, in acres	678·40
Total crop reaped, in lbs.	901,063
Average outturn per acre, in lbs.	1,332

STATEMENT III.

Báo.

		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
Number of experiments.	1895-96	...	...	14	2	...	...	2	...	...	...	...	...	16	2
	1896-97	...	...	15	...	...	...	3	...	...	...	...	...	18	...
Total area cut, in acres.	1895-96	...	...	4·13	0·66	...	...	0·66	...	...	...	...	...	4·79	0·66
	1896-97	...	...	5·00	...	...	...	1·00	...	...	...	...	...	6·00	...
Total crop reaped, in lbs.	1895-96	...	...	4,582	1,144	...	...	557	...	...	...	...	...	5,139	1,144
	1896-97	...	...	5,517	...	...	...	956	...	...	...	...	...	6,473	...
Maximum per acre, in lbs.	1895-96	...	...	2,004	1,752	...	...	840	...	...	...	...	...	2,004	1,752
	1896-97	...	...	1,389	...	...	...	1,017	...	...	...	...	...	1,389	...
Minimum per acre, in lbs.	1895-96	...	...	258	1,677	...	...	831	...	...	...	...	...	258	1,677
	1896-97	...	...	624	...	...	...	894	...	...	...	...	...	624	...
Average per acre, in lbs.	1895-96	...	...	1,109	1,733	...	...	835	...	...	...	...	...	1,073	1,733
	1896-97	...	...	1,103	...	...	...	956	...	...	...	...	...	1,079	...

Total number of experiments made up to the close of the year 1896-97 with *báo dhán* .	513
Total area cut, in acres	167·27
Total crop reaped, in lbs.	207,355
Average outturn per acre, in lbs.	1,239

STATEMENT IV.

Sylhet rice.

	Lowland *áus.*			Highland *áus.*						*Murdli.*			*Sáli.*			*Sáilburá.*			Highland *áman.*						*Kátáriá.*			Lowland *áman.*		
				Transplanted.			Broadcast.												Transplanted.			Broadcast.								
	In 1895-96.	In 1896-97.	Total of nine years ending 1896-97.	In 1895-96.	In 1896-97.	Total of nine years ending 1896-97.	In 1895-96.	In 1896-97.	Total of nine years ending 1896-97.	In 1895-96.	In 1896-97.	Total of nine years ending 1896-97.	In 1895-96.	In 1896-97.	Total of fourteen years ending 1896-97.	In 1895-96.	In 1896-97.	Total of fourteen years ending 1896-97.	In 1895-96.	In 1896-97.	Total of nine years ending 1896-97.	In 1895-96.	In 1896-97.	Total of nine years ending 1896-97.	In 1895-96	In 1896-97.	Total of nine years ending 1896-97.	In 1895-96.	In 1896-97.	Total of nine years ending 1896-97.
Number of experiments	1	...	31	5	2	40	1	2	59	...	...	10	25	28	499	10	3	236	14	2	41	...	...	116	1	3	33	25	41	199
Total area cut, in acres	0·25	...	8·96	0·89	0·66	10·10	0·33	0·66	14·33	...	...	2·56	6·60	12·30	133·92	2·98	0·83	67·73	3·84	0·66	10·27	...	...	32·81	0·25	0·92	8·92	6·79	13·45	57·69
Total crop reaped, in lbs.	496	...	11,229	1,281	1,111	13,954	411	693	14,734	...	...	2,825	9,309	11,059	1,89,485	5,194	1,201	1,10,255	4,894	299	14,022	...	...	50,508	220	1,012	12,782	8,684	16,696	74,026
Maximum per acre, in lbs.	1,984	...	3,218	2,318	1,851	2,432	1,245	1,233	3,786	...	...	2,152	2,345	2,961	4,986	2,546	1,728	4,363	1,851	618	2,468	...	...	7,808	880	2,319	2,319	2,632	3,333	3,333
Minimum per acre, in lbs.	1,984	...	360	1,110	1,479	480	1,245	846	204	...	...	420	495	276	159	1,160	1,257	240	528	282	282	...	...	198	880	291	291	247	135	135
Average per acre, in lbs.	1,984	...	1,253	1,439	1,683	1,381	1,245	1,050	1,028	...	...	1,104	1,410	899	1,415	1,743	1,447	1,628	1,274	453	1,365	...	...	1,539	880	1,100	1,433	1,279	1,241	1,283

STATEMENT V.

Cáchar rice.

	Dumái.			Muráli.					Ásrá.			Sáil.		
				1895-96.		1896-97.								
	1895-96.	1896-97.	Total of nine years ending 1896-97.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Total of nine years ending 1896-97.	1895-96.	1896-97.	Total of nine years ending 1896-97.	1895-96.	1896-97.	Total of fourteen years ending 1896-97.
Number of experiments	4	1	23	7	7	6	1	67	2	3	36	62	67	334
Total area cut, in acres	1·16	0·33	6·66	1·83	1·83	2·00	0·33	19·00	0·66	0·83	11·30	20·66	21·67	103·46
Total crop reaped, in lbs.	900	407	6,505	1,813	1,759	1,566	411	22,158	1,208	917	15,158	29,253	16,171	145,766
Maximum per acre, in lbs.	1,068	1,221	1,560	1,692	1,296	1,401	1,234	2,877	1,974	1,383	2,511	2,766	1,998	3,200
Minimum per acre, in lbs.	384	1,221	384	726	642	162	1,234	162	1,650	864	606	462	38	38
Average per acre, in lbs.	776	1,221	975	991	961	783	1,234	1,166	1,830	1,105	1,341	1,416	746	1,408

STATEMENT VI.

Khási and Jaintia Hills.

	Upland rice.			Lowland rice.		
	1895-96.	1896-97.	Total (15 years ending 1896-97).	1895-96.	1896-97.	Total (15 years ending 1896-97.)
Number of experiments	42	38	667	78	78	817
Total areas cut, in acres	14·00	12·67	180·97	26·00	26·00	221·01
Total crop reaped, in lbs.	13,305	9,828	140,381	28,393	28,826	213,203
Maximum per acre, in lbs.	1,356	1,356	2,264	1,851	2,832	3,400
Minimum per acre, in lbs.	489	369	40	462	462	192
Average per acre, in lbs.	950	776	776	1,092	1,108	964

STATEMENT VII.

Gáro Hills.

	Asu.			Sali.		
	1895-96.	1896-97.	Total (15 years ending 1896-97).	1895-96.	1896-97.	Total (15 years ending 1896-97.)
Number of experiments	14	11	122	4	4	33
Total area cut, in acres	3·92	3·67	38·75	0·58	1·33	10·22
Total crop reaped, in lbs	4,600	2,832	37,059	1,127	2,544	16,270
Maximum per acre, in lbs.	1,623	1,806	2,480	2,220	2,961	2,961
Minimum per acre, in lbs.	678	216	160	987	1,110	738
Average per acre, in lbs.	1,173	772	956	1,943	1,912	1,592

STATEMENT VIII.

Sugarcane.

District.	Number of experiments.		Total area, in acres.		Total weight of cane, in lbs.		Total weight of juice, in lbs.		Total weight of *gur*, in lbs.		Weight of *gur* per acre, in lbs.		Pounds of juice per 100 lbs. of cane.		Pounds of *gur* per 100 lbs. of cane.		Pounds of *gur* per 100 lbs. of juice.	
	1895-96.	1896-97.	1895-96	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1893-97.
Cáchár	10	10	2·30	0·67	5,406	11,360	2,708	6,045	481	1,001	209	1,494	50·09	53·21	8·89	8·81	17·76	16·56
Sylhet	6	7	0·49	0·38	20,369	14,753	7,784	5,638	1,098	985	2,241	2,592	38·21	38·21	4·14	6·67	14·10	17·47
Total Surma Valley	16	17	2·79	1·05	25,775	26,113	10,492	11,683	1,579	1,986	566	1,891	40·71	44·74	6·12	7·60	15·05	17·00
Goálpárá	1	3	0·07	0·19	493	8,101	164	2,686	41	605	586	3,184	33·26	33·15	8·32	7·47	25·00	22·52
Kámrúp	19	15	1·36	1·10	26,045	25,089	10,888	10,382	1,929	1,776	1,409	1,614	41·80	41·38	7·40	7·08	17·71	17·10
Darrang	...	1	...	0·02	...	668	...	380	...	72	...	3,600	...	56·88	...	10·78	...	18·95
Nowgong	16	4	1·13	0·26	12,877	13,706	5,416	6,391	911	1,222	806	4,700	42·01	46·63	7·07	8·91	16·84	19·12
Shibsagar	14	6	1·10	0·34	21,213	11,194	10,469	5,579	1,901	1,110	1,728	3,265	49·35	49·84	8·96	9·91	18·16	19·89
Lakhimpur	35	24	2·35	1·61	53,304	45,549	28,262	13,173	5,620	4,309	2,391	2,676	53·02	28·92	10·54	9·46	19 88	32·71
Total Brahmaputra Valley	85	53	6·01	3·52	113,932	104,307	55,193	38,591	10,402	9,094	1,731	2,583	48·44	36·99	9·13	8·71	18·84	23·56
Total for the Province	101	70	8·80	4·57	139,707	130,420	65,685	50,274	11,981	11,080	1,361	2,424	47·01	38·54	8·57	8·49	18·24	22·04
Total for 1894-95	115		7·35		189,662		90,611		16,560		2,253		47·77		8·73		18·27	
„ 1893-94	116		10·755		157,407		74,282		11,525		1,071		47·19		7·32		15·51	
„ 1892-93	92		6·32		120,996		55,124		10,712		1,695		45·55		8·85		19·43	
„ 1891-92	95		10·99		140,760		72,064		13,464		1,225		51·19		9·56		18·68	
„ 1890-91	121		9·32		164,733		81,602		14,600		1,566		49·53		8·86		17·89	
„ 1889-90	131		14·18		228,189		106,564		16,625		1,172		46·69		7·28		15·60	
„ 1888-89	150		15·47		245,680		120,476		21,259		1,374		49·03		8·65		17·64	
„ 1887-88	148		21·26		346,412		171,663		30,499		1,434		49·55		8·80		17·77	
„ 1886-87	128		24·00		409,766		208,863		34,437		1,435		50·97		8·40		16·49	
„ 1885-86	93		16·05		370,606		155,649		26,159		1,629		42·00		7 06		16·81	
„ 1884-85	151		20·59		455,848		206,738		35,701		1,734		45·35		7·83		17·27	
„ 1883-84	80		...		210,329		97,159		18,970		...		46·19		9·02		19·52	
Total	1,591		169·655		3,310,515		1,556,754		273,572		1,500		47·03		8·26		17·57	

STATEMENT IX.

Miscellaneous Crops.

—	Mátikálái (phaseolus mungo, var, radiatus).																		Mung (phaseolus mungo).					
	Cachar.		Sylhet.		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total up to the end of		Kamrup.		Nowgong.		Total up to the end of	
	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.
Number of experiments .	5	5	...	...	7	1	15	11	7	9	31	16	9	7	31	35	1,834	1,918	16	6	...	...	139	145
Total area experimented upon, in acres.	1·50	0·90	...	...	2·33	0·33	4·66	3·53	1·58	2·21	10·33	5·33	2·32	2·17	10·33	11·66	91·59	117·72	4·91	1·46	...	...	30·53	31·99
Total crop gathered, in lbs. .	671	524	...	...	1,072	29	1,042	730	541	625	4,182	1,613	1,354	1,349	6·254	7,749	41,810	54,429	1,038	240	...	...	10,295	10,535
Maximum per acre, in lbs. .	711	1,035	...	...	741	87	678	525	612	432	771	555	1,326	993	1,068	1,350	2,100	2,100	369	339	...	...	840	840
Minimum per acre, in bs. .	234	468	...	...	193	87	93	54	93	60	63	24	169	72	186	252	18	18	54	77	...	...	42	42
Average per acre, in lbs. .	447	582	...	...	460	87	223	207	342	283	405	302	584	621	605	664	457	462	211	164	...	...	337	329

—	Rape seed.				Linseed.				Til (sesamum).				Cotton.				Potato.			
	Sylhet.		Total up to the end of		Sylhet.		Total up to the end of		Kamrop.		Total up to the end of		Garo Hill.		Total up to the end of		Lakhimpur.		Total up to the end of	
	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.
Number of experiments .	3	1	29	30	5	4	26	30	9	7	94	101	8	10	28	38	2	...	7	7
Total area experimented upon, in acres.	0·90	0·33	14·55	14·89	1·20	1·11	5·06	6·17	2·55	2·06	26·26	28·32	2·66	3·33	10·07	13·40	0·66	...	1·79	1·79
Total crop gathered, n lbs. .	385	136	5,022	5,158	605	354	1,846	2,200	744	753	7,401	8,154	513	1,613	2,422	4,035	714	...	4,754	4,754
Maximum per acre, in lbs. .	543	412	1,028	1,028	649	618	4,020	4,020	492	678	1,058	1,058	463	987	885	987	1,158	...	6,171	6,171
Minimum per acre, in lbs. .	288	412	36	36	344	252	150	150	60	129	46	46	105	78	62	62	981	...	981	981
Average per acre, in lbs. .	428	412	345	346	504	319	365	356	291	365	282	288	192	484	240	301	1,082	...	2,656	2,656

STATEMENT X.

D.—Mustard.

	Cáchár.		Sylhet.		Total Surma Valley.		Goálpára.		Kámrúp.		Darrang.		Nowgong.		Sibságar.		Lakhimpur.		Total Brahmaputra Valley.		Total for the Province.		Total for the Province up to end of	
	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896 97.	1895-96.	1896-97.	1895-96.	1896-97.	1895-96.	1896-97.
Number of experiments	2	9	7	11	9	20	5	12	23	20	7	8	29	15	7	5	13	15	84	75	93	95	2,041	2,136
Total area experimented upon, in acres	0·50	2·16	2·00	3·43	2·50	5·59	1·66	4·00	7·21	6·67	1·56	2·49	9·66	5·00	1·90	1·67	4·33	5·00	26·32	24·83	28·82	30·42	682·71	713·13
Total crop gathered, in lbs.	138	1,237	827	1,193	965	2,430	905	2,221	4,406	3,330	874	1,112	5,136	2,022	1,150	1,083	4,762	3,106	17,233	12,874	18,198	15,304	346,617	361,921
Maximum per acre, in lb	309	1,176	771	654	771	1,176	729	987	1,554	777	1,110	717	1,173	720	1,296	924	1,665	1,005	1,665	1,005	1,665	1,176	21 00	2,100
Minimum per acre, in lbs.	216	216	93	81	93	81	369	315	183	105	309	171	105	159	246	432	462	171	105	105	93	81	21	21
Average per acre, in lbs.	276	572	413	347	386	434	545	555	611	499	560	447	532	404	605	648	1,099	621	655	518	631	503	507	507

APPENDIX B.

Note on the Agricultural Statistics of Assam.

The Chief Commissioner, in his Resolution on the report of the Assam Agricultural Department for 1884-85, while accepting more or less guardedly the accuracy of the results of the small number of crop experiments made up to that time, remarked that the next step should be to check these averages in the Assam Valley by a computation of consumption, imports, and exports compared with the total production of the valley on the recorded cultivated area.

No such calculation has, as far as I am aware, been made, though Mr. Stack had made, in the previous year (1884), in his first report on the working of the Agricultural Department, from the incomplete materials then available, a rough calculation on these lines.

2. Since Mr. Stack's report the facilities for making the calculations have greatly increased. The census of 1891 furnishes exact information as to the population and rate of increase of the population of each district. The extension of the cadastral survey from an area covered by nine *mauzás* in Kámrúp in 1883 to an area of 7,800 square miles in 1896; the improved state of efficiency of the cadastral staff employed to maintain village maps and records, and the improvements effected in the system of registering river-borne trade, furnish statistics which, though not perhaps absolutely accurate, must be more reliable than when the Agricultural Department was first instituted in this Province.

3. I propose now, by examining the figures available for the five Upper Assam Valley districts, to make a calculation on the lines indicated in the Chief Commissioner's Resolution of 1885. Goálpára has been excluded from the calculation, as no figures are available for the permanently-settled portion of that district.

4. If from the calculation it appear reasonably certain that our statistics for the cadastral area are correct, I propose to reverse the process and attempt to ascertain the area cropped with rice in the Surma Valley. The latter figure is at present, I believe, unknown.

The statement appended to this note exhibits the statistics of the area under rice and the population, as well as the calculations based thereon for each of the five upper districts of the Assam Valley.

From the returned area cropped with rice and the average results of the 5,917* experiments made in *áhu* and *sáli dhán* the total outturn of each district has been ascertained.

* *i. e.* up to the close of the year 1895-96. F. J. M.

From the outturn has been deducted the estimated quantity of *dhán* required for seed at 1½ maunds per acre for *áhu* and ½ maund per acre for *sáli*. A further deduction of 5 per cent. has been made for wastage, feed of bullocks, etc.

The balance thus arrived at, plus the net imports, represents the amount available for consumption.

Taking from the 1891 census report the rate of increase of the population of each district, an estimate of the present population has been made. This figure multiplied by 10, which I have calculated to be the number of maunds of *dhán* annually consumed per head, represents the total consumption.

The accuracy of the statistics of cropped area and the estimates of outturn employed in the calculation is determined by the measure of agreement between the total amount available for consumption as deduced therefrom and the total amount probably consumed.

Before examining the results of the calculation, it remains to ascertain how far the assumptions made are correct, or how far the possibility of error exists.

The data used are—

1. Population of each district.
2. Cropped area.
3. Outturn per acre for each variety of rice.
4. Amount used for seed for each variety of rice.
5. Amount consumed in ways other than as food.
6. Figures of imports and exports.
7. Amount consumed per head as food.

The accuracy of 2 and 3 need not be examined, as one of the objects of the calculation is to determine the acuracy of those figures.

The approximate accuracy of 1 and 6† is fairly certain, while there can be little doubt that the figures employed under 4 are as nearly as possible correct. They have been taken from Mr. Darrah's Note on agricultural expenditure in the Assam Valley, and embody the result of his exhaustive enquiries in this direction.

† Over 90 per cent. of the rice imported into the Brahmaputra Valley is carried by *steamer*.

I have followed Mr. Stack and deducted 5 per cent. for wastage etc. (5). The exact determination of this factor is impossible, and it is necessary to be content with a rough estimate.

The figure employed under 7 is the pivot of the whole calculation.

The Immigration Act assumes that 10 chattacks of rice per day is sufficient for an adult. In jails 10 chattacks of rice supplemented by many other articles of food are given. I have made a large number of enquiries, and am forced to the conclusion that among the agricultural population an adult consumes more than this amount. It is certain that he consumes in very many cases 1 seer per diem. The amount is variously estimated at from 10 to 16 chattacks. Children eat less, but waste more.

Remembering that the average Assam household consists of three adults and two children, I arrive, estimating that an adult will eat 12 and a child 8 chattacks per day, at an average consumption of nearly 6 maunds of husked rice per annum.

This, translated into maunds of unhusked rice or *dhán*, gives nearly 10 maunds of *dhán* as the average consumption per head per annum.

The broad result of the calculation is as follows :—

The present estimated population of the five Upper Assam Valley districts is 2,118,000.

The area under early rice is 280,759, and that under late rice 944,135 acres.

The outturn of the former is 4½ million, that of the latter 18 million maunds, of *dhán* and the total outturn of *dhán* for the valley 22½ million maunds. Four hundred and twenty thousand maunds is required for seed for the early and 472,000 maunds for the late rice crop. The balance 21½ million maunds is the total average crop. Deducting 1 million maunds for wastage, etc., and adding 1 million maunds, the net imports, the balance remaining is 21½ million maunds, which represents the total amount available for consumption. This is somewhat more than the quantity required to feed the present estimated population at 10 maunds per head.

The approximate agreement between these two totals—the amount available and the amount consumed—is gratifying evidence of the accuracy of the statistics on which the calculation has been based.

It appears, moreover, examining the statement more in detail, that the figures showing the surplus or deficit in each district agree exactly with our knowledge of the local conditions of the different districts.

Kámrúp produces a large surplus. Darrang is self-supporting, while the remaining three Upper Valley districts are forced to import.

Of the movements of *dhán* between different parts of the valley, our knowledge is vague. It is known roughly in the upper portion of the valley that the north bank exports largely to the south bank, that Golaghat sends its surplus to Titabar, and that the sadar subdivision of Lakhimpur district imports from all parts.

A calculation, similar to the one now made, for each sub-division, or even for each mauza, would be interesting as affording some materials for ascertaining the movements of *dhán* between different areas in the valley.

No calculation on the lines I have indicated is possible for the Surma Valley. No figures are at present available for the cropped area in Cáchár,(*a*) and the figures * given for Sylhet in successive Administration Reports refer to the cadastrally-surveyed portions of that district only.

	Acres.
*1893-94. . .	10,630
1894-95. . .	110,578
1895-96. . .	138,087

It is, however, possible, by a reverse calculation, to arrive at a rough approximation of the total area cropped with rice in the Surma Valley.

The estimated population is 2,663,000. The total consumption may therefore be taken at 26½ million maunds of *dhán*. Adding the net exports, 1½ million maunds, and, including 5 per cent. wastage, the gross outturn of the valley works out to 29½ million maunds of *dhán*.

To arrive at the area cropped with each broad class of rice it is necessary to assume that in the whole valley the area cropped with *áus* bears to the area cropped with *sáil* and *áman* the same proportion as is found in the Jáintia parganahs and Partábgarh (for which areas figures are available).

If this is assumed, it appears that 25 per cent. of the total area cropped with rice is under *áus*, yielding 14 maunds per acre, and that 75 per cent. is under *sáil* and *áman*, yielding 18 maunds per acre.

Remembering also that 1½ maunds per acre is required for seed for early and ½ maund for late rice the total number of acres cropped (x) is determined by the following equation :—

$$\frac{x}{4}(14-1\tfrac{1}{2})+\frac{3x}{4}(18-\tfrac{1}{2})=29{,}500{,}000;$$

$$x=1{,}815{,}384 \text{ acres,}$$

or, say, roughly 1¾ million acres.

(*a*) Since the note was written crop statistics for a portion of the Cáchár District have become available.—F. J. M.

STATEMENT.

In thousands of maunds, thousands of acres and thousands of persons.

District.	Area under early rice.	Area under late rice.	Outturn of early rice.	Outturn of late rice.	Total outturn.	Net imports.	Amount required for seed.	Net crop.	Wastage, 5 per cent. of crop.	Amount available for food (excluding imports).	Amount available (including imports).	Population.	Consumption.	Surplus or deficit.
Kámrúp	153½	310½	2,457½	5,900½	8,357½	−63½	385½	7,972	398½	7,573½	7,505	634	6,340	+1,165
Darrang	30½	156¾	489½	2,979¾	3,469	...	124½	3,344¾	167½	3,177½	3,177½	323	3,230	−52½
Nowgong	60½	132½	969¾	2,513½	3,483	200	157	3,326	166½	3,159¾	3,359¾	361	3,610	−250½
Sibságar	15½	253½	248	4,814	5,062	338½	150	4,912	245½	4,666½	5,004¾	500	5,000	+4¾
Lakhimpur . . .	20½	91	328	1,731½	2,059½	683	76½	1,983	99½	1,883¾	2,566¾	300	3,000	−433½
	280½	944	4,492½	17,938½	22,430¾	1,152¾	893	21,537¾	1,077	20,460¾	21,613½	2,118	21,180	+433½

The figures in italics are guesses.

L. J. KERSHAW.

GOLAGHAT;
The 14th March 1897.

G. I. C. P. O. No. 16 S. to C. C. Assam.—5-10-97—340.—H. K.

ANNUAL NOTE.

ON

CROP EXPERIMENTS IN ASSAM

FOR

1897-98.

BY

F. C. HENNIKER, Esq., I.C.S.,
OFFICIATING DIRECTOR, DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM.

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FROM

F. C. HENNIKER, Esq., I.C.S.,

Offg. Director, Department of Land Records and Agriculture, Assam,

To

THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Shillong, the 7th July 1898.

SIR,

I HAVE the honour to submit the Annual Note on Crop Experiments carried out in Assam during the year 1897-98.

I have the honour to be,

SIR,

Your most obedient Servant,

F. C. HENNIKER,

Offg. Director, Department of Land Records and Agriculture, Assam.

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ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

FOR THE YEAR

1901-1902.

BY

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OFFICIATING DIRECTOR, DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM.

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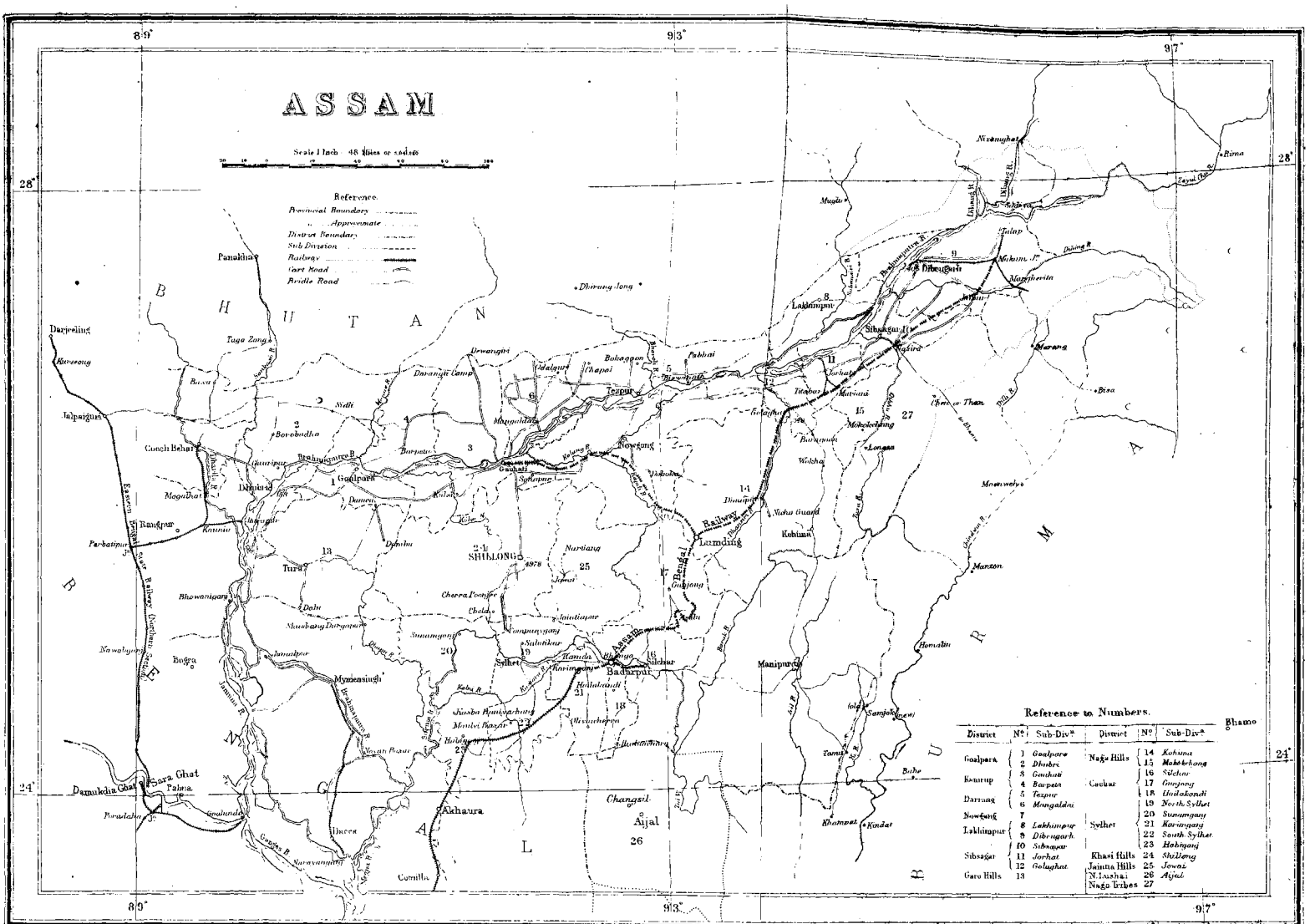

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ANNUAL NOTE

ON

CROP EXPERIMENT IN ASSAM

FOR

1897-98.

Nature of experiments.

Experiments were made as usual during the year to ascertain the outturn of—

A.—Rice of various kinds.

B.—Sugarcane.

C.—Miscellaneous crops.

D.—Mustard.

In estimating the outturn of crops, the maund has been taken at 82⅔ lbs. and the *bigha* at one-third of an acre.

Number of experiments.

2. The statement below shows the number of experiments carried out in each district, as compared with the figures of the preceding year:

Number of Experiments.

Crops.	Cachar.		Sylhet.		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Khasi and Jaintia Hills.		Garo Hills.		Total for the province.	
	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.
1	2		3		4		5		6		7		8		9		10		11		12	
Sali ...	67	41	28	21	26	17	20	15	11	13	17	53	26	41	36	36	78	90	4	4	313	331
Ahu ...	8	28	4	9	4	18	12	4	...	2	15	29	3	5	26	27	38	36	11	15	121	173
Bao ...	3	5	46	36	...	...	15	3	...	...	3	20	...	...	...	...	...	...	...	...	67	64
Sailbura ...	...	...	3	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	30
Cane ...	10	10	7	5	3	2	15	8	1	2	4	...	6	3	24	24	...	...	...	...	70	54
Linseed ...	...	...	4	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	5
Rape seed ...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2
Mung ...	...	...	...	...	...	...	6	1	...	...	...	...	...	1	...	...	...	...	...	...	6	2
Til ...	...	...	...	...	...	...	7	2	...	...	...	...	...	...	...	...	...	...	...	...	7	2
Cotton ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	10	10	10
Matikalai ...	5	5	...	1	1	...	11	1	9	8	16	14	7	1	35	31	...	...	...	...	84	61
Mustard ...	9	10	11	17	12	5	20	18	8	5	15	...	5	8	15	14	...	...	...	...	95	77
Potato ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jute ...	...	...	...	13	...	26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	39
Khesari (pulses)	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Total ...	102	99	104	139	46	68	106	53	29	30	70	116	47	59	136	132	116	126	25	29	781	851

There was an increase in the number of experiments effected, in all districts except Cachar, Kamrup, and Lakhimpur, the increase being largest in Nowgong (116 against 70). In Sylhet the increase in the number of experiments would have been larger had not the records of the experiments made in the Habiganj subdivision been destroyed along with other records by fire. In Kamrup the number of experiments fell from 106 to 53.

Results of experiments.

3. The statements, I to X, annexed compare the results of experiments made with different crops in the two years 1896-97 and 1897-98; they also exhibit the aggregate results of all experiments made with each crop up to the close of the latter year.

A.—RICE (STATEMENTS I TO VII).

Rice experiments.

4. The figures of outturn shown under this head represent the yield of unhusked rice.

I.—BRAHMAPUTRA VALLEY (STATEMENTS I, II, AND III).

Brahmaputra Valley rice experiments.

Sali (late transplanted rice) is the most important crop grown in the Brahmaputra Valley, and is also that with which the largest number of experiments (4,269) have been made. According to the results of these experiments, the average yield of the crop per acre is a little over 19 maunds. The results of experiments with the two varieties of *sali*, *viz.*, *bar dhan* and *lahi dhan*, have been separately recorded for the past ten years only, and the results of last year's experiments continue to be in accord with those of experiments in previous years, as well as with what is generally known regarding the comparative productiveness of the two varieties, namely, that *bar dhan* is much more prolific than the finer variety, *lahi dhan*. The average outturns obtained from the experiments made since 1887-88 up to date were for the former about 21½ maunds and for the latter 15¼ maunds per acre.

The average outturn of *ahu* (early rice, broadcast) obtained from the results of experiments made, up to date, is a little over 16 maunds per acre, and that of *bao* (low land broadcast) is 15 maunds per acre. The average for rice of all kinds grown in the valley is nearly 18 maunds per acre.

II.—SYLHET (STATEMENT IV).

Sylhet rice experiments.

Altogether 520 experiments have been made with the *sail* (or late transplanted rice) of Sylhet, which give an average outturn of over 17¼ maunds per acre.

The experiments made with *sailbura*, which is only inferior in point of outturn to the *bar dhan* of the Brahmaputra Valley, give an average outturn of about 20 maunds per acre. This is an irrigated crop sown about October, transplanted in January and reaped in April.

The average outturn given by the results of experiments made with early rice (*aus* and *murali*) is over 14½ maunds per acre, and that with the varieties of late rice (*aman* and *kataria*) is about 17 maunds per acre. The average outturn of all kinds of rice grown in Sylhet is over 17½ maunds per acre.

III.—CACHAR (STATEMENT V).

Cachar rice experiments.

The experiments made in this district have been very few in number. They give an average outturn for *sail* of 17 maunds per acre, for *dumai* and *murali* (early rice) of 14 maunds, for *asra* (late broadcast rice) of a little over 16½ maunds, and for all rice grown in the district of about 16½ maunds.

IV.—HILL RICE (STATEMENTS VI AND VII).

Hill rice experiments.

The varieties of rice raised in the Khasi and Jaintia Hills are less productive than those grown in the plains, the average outturn for the district being about 11 maunds per acre only.

The figures shown against the Garo Hills include the results of experiments made in the plains portion of the district, the average outturn for the district being a little over 13½ maunds per acre.

B.—SUGARCANE (STATEMENT VIII).

Sugarcane experiments.

5. The experiments which have been made with this crop number 1,645 up to date.

They give the following results :

(1) The average weight of *gur* (molasses) per acre is 1,513 lbs., or a little below 18½ maunds.

(2) Cane yields 47·12 per cent. of its weight of juice and 8·30 per cent. of its weight of *gur* (molasses).

(3) The juice yields 17·61 per cent. of its weight of *gur* (molasses).

C.—MISCELLANEOUS CROPS (STATEMENT IX).

6. During the year, jute was the subject of 48 experiments in Sylhet and Goalpara. No experiments were made with this crop in the six years from 1891-92 to 1896-97, and prior to 1891-92 only 9 experiments had been made. The aggregate number of cuttings made up to date is yet too small to give a reliable estimate of average outturn.

D.—MUSTARD (STATEMENT X).

Mustard experiments.

7. Since experiments with mustard were resumed in 1892-93, there have been 542 such experiments in the Brahmaputra Valley, the total area cut being 168·13 acres, the total crop gathered 102,028 lbs., and the average outturn per acre 607 lbs., or a little below 7½ maunds. In the Surma Valley, there have been 119 experiments, the total area cut has been 31·58 acres, the total outturn 14,456 lbs., and the average yield per acre 457 lbs., or a little over 5½ maunds.

GENERAL REMARKS.

Rejected experiments.

8. A number of reports of experiments made during the year have been rejected, because the area experimented on was over one *bigha* in the case of rice, mustard or miscellaneous crops, or less than one-fifth of a *bigha* or over half a *bigha* in the case of sugarcane. Some experiments which gave apparently impossible results have also been rejected.

The following statement shows the number of experiments which were rejected during the years 1896-97 and 1897-98:

District.	Rice.				Cane.				Mustard.				Miscellaneous crops.			
	Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.	
	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Cachar	...	39	...	13·67	...	...	...	...	...	...	...	...	...	...	...	...
Sylhet	35	...	11·60	...	1	...	0·005	...	1	...	0·33	...	...	...	...	...
Goalpara	...	...	...	...	1	...	0·16	...	...	...	...	...	...	...	...	...
Darrang	6	...	2·67	...	4	...	1·06	...	...	...	...	...	...	...	...	...
Sibsagar	...	2	...	0·67	1	1	0·33	0·03	...	...	...	...	...	3	...	0·73
Total	41	41	14·27	14·34	7	1	1·555	0·03	1	...	0·33	...	...	3	...	0·73

Experiments by supervisor kanungos and mandals.

9. This note deals with experiments made by officers not lower in rank than mauzadars and head constables under the ordinary rules for crop cuttings in force in this province. Besides these, a number of experiments with *sali dhan*, sugarcane and mustard were made last year in the Sibsagar district by certain supervisor kanungos and mandals selected for their efficiency and trustworthiness, in accordance with the system of maintaining mauza books, which was tentatively introduced in that district during the last cold weather; but as the results of some of the experiments have not yet been received, they could not be utilised for the purpose of this note.

Experimenting officers.

10. The names of the superior officers who conducted experiments during the year are given in the statement below:

Name.	Rice.	Cane.	Mustard.	Miscellaneous.	Total.
1	2	3	4	5	6
F. S. R. Anley, Esq., Extra Assistant Commissioner, Superintendent of Jail, Silchar.	3	...	...	...	3
Manmatha Nath Ghosh, Esq., Extra Assistant Commissioner, Sylhet Sadr subdivision.	2	...	...	...	2
Babu Jagat Bandhu Nag, Subdivisional Officer, Sunamganj ...	1	...	...	...	1
„ Akshaya Kumar Chaturji, Extra Assistant Commissioner, Sunamganj.	3	...	1	...	4
J. A. Ezechiel, Esq., Subdivisional Officer, Karimganj	3	...	...	...	3
Babu Ram Tarak Barman, Special Sub-Registrar, Karimganj ...	2	...	...	...	2

Name.	Rice.	Cane.	Mustard.	Miscellaneous.	Total.
1	2	3	4	5	6
Maulvi Muhammad Abdullah, Sub-Deputy Collector, Maulvi Bazar	11	3	3	...	17
G. Balthasar, Esq., Subdivisional Officer, Goalpara	3	...	...	...	3
Munshi Faizuddin Ahmed, Sub-Deputy Collector, Dhubri, Goalpara	15	...	...	...	15
Babu Nibaran Chandra Mukharji, Tahsildar, Goalpara ...	...	...	...	3	3
Rai Madhav Chandra Bardalai, Bahadur, Subdivisional Officer, Barpeta, Kamrup.	3	...	2	...	5
Babu Abhaya Sankar Guha, Sub-Deputy Collector, Barpeta, Kamrup	...	...	1	...	1
„ Rajani Kanta Bardalai, Sub-Deputy Collector, Gauhati, Kamrup.	1	...	...	...	1
Munshi Muhammad Eunas Ali, Tahsildar, Kamrup	4	5	...	...	9
Babu Ganga Ram Das, „ „	5	2	3	3	13
„ Kali Ram Chaudhuri, „ „	1	...	...	...	1
„ Ratna Kanta Barua, „ „	2	...	1	1	4
„ Rati Chandra Sarma, „ Darrang	3	...	2	2	7
„ Ganga Nath Sarma, „ „	2	1	1	1	5
„ Bhabani Charan Sarma, „ „	1	...	...	1	2
„ Kali Ram Chaudhuri, Extra Assistant Commissioner, Nowgong.	4	...	...	...	4
„ Dakshina Charan Sen, Extra Assistant Commissioner, Nowgong	4	...	...	...	4
„ Santi Ram Hazarika, Tahsildar, Nowgong	5	...	...	2	7
„ Gunahasb Gosvami, Offg. Tahsildar, Nowgong	12	...	...	...	12
„ Phedela Ram Das, „ „ „	2	...	...	...	2
Munshi Didar Uddin Ahmed, Sub-Deputy Collector, Sibsagar Sadr.	2	2	1	...	5
Babu Radha Kanta Handiqui, Sub-Deputy Collector, Jorhat, Sibsagar.	5	...	...	...	5
„ Durga Prasad Barua, Tahsildar, Sibsagar	2	...	...	...	2
„ Someswar Sarma Barua, „ „	4	...	...	...	4
„ Hem Chandra Goswami, Sub-Deputy Collector, Dibrugarh, Lakhimpur.	1	1	...	...	2
„ Padma Nath Barua, Tahsildar, Lakhimpur	7	3	3	3	16

F. C. HENNIKER,

Offg. Director, Department of Land Records and Agriculture, Assam.

Shillong,

The 7th July 1898.

APPENDICES.

Appendix A.

STATEMENT I.

Sali.

—		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Bar dhan.	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments.	1896-97	26	...	5	15	11	...	15	2	17	9	34	2	108	28
	1897-98	13	4	10	5	13	...	31	22	37	4	36	...	140	35
Total area cut, in acres.	1896-97	8·67	...	1·67	5·00	3·08	...	5·00	0·66	5·67	3·00	11·33	0·66	35·42	9·32
	1897-98	4·33	1·33	2·53	1·67	4·17	...	10·33	7·33	12·33	1·33	12·00	...	45·70	11·67
Total crop reaped, in lbs.	1896-97	16,902	...	2,355	5,667	4,929	...	4,573	137	8,549	3,802	19,058	615	56,366	10,221
	1897-98	8,963	1,181	3,710	2,283	7,755	...	13,606	7,953	18,152	1,458	20,446	...	72,632	12,880
Maximum per acre, in lbs.	1896-97	3,084	...	1,818	1,389	2,499	...	1,851	258	2,067	1,688	2,457	957	3,084	1,688
	1897-98	2,856	1,134	2,055	1,461	2,592	...	2,313	1,881	2,640	1,512	2,796	...	2,856	1,881
Minimum per acre, in lbs.	1896-97	876	...	1,017	765	987	...	93	153	648	864	951	888	93	153
	1897-98	684	462	555	1,296	636	...	648	246	501	864	741	...	501	246
Average per acre, in lbs.	1896-97	1,949	...	1,410	1,133	1,600	...	914	207	1,508	1,267	1,682	922	1,591	1,096
	1897-98	2,070	888	1,466	1,370	1,859	...	1,317	1,085	1,472	1,096	1,704	...	1,589	1,103

Total number of experiments made up to the close of the year 1897-98 with *sali dhan* ...	4,269
Total area cut, in acres	1,379·08
Total crop reaped, in lbs.	2,171,008
Average outturn per acre, in lbs.	1,574

For ten years 1887-88 to 1897-98.

—	*Bar dhan.*	*Lahi dhan.*
1	2	3
Total number of experiments made	1,651	505
Total area cut, in acres	513·78	156·76
Total crop reaped, in lbs.	903,939	196,436
Average outturn per acre, in lbs.	1,759	1,253

STATEMENT II.

Ahu.

—		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments...	1896-97	4	...	11	1	...	...	15	...	3	...	26	...	59	1
	1897-98	18	...	3	1	2	...	29	...	5	...	27	...	84	1
Total area cut, in acres...	1896-97	1·33	...	3·67	0·33	...	...	5·00	...	1·00	...	8·66	...	19·66	0·33
	1897-98	6·00	...	0·73	0·07	0·67	...	9·67	...	1·67	...	9·00	...	27·74	0·07
Total crop reaped, in lbs.	1896-97	2,266	...	4,071	238	...	...	6,005	...	638	...	13,019	...	25,999	238
	1897-98	11,636	...	1,002	97	1,294	...	7,836	...	1,444	...	11,771	...	34,983	97
Maximum per acre, in lbs.	1896-97	1,974	...	1,821	714	...	...	1,788	...	801	...	3,195	...	3,195	714
	1897-98	2,481	...	1,605	1,386	2,703	...	1,758	...	1,050	...	2,562	...	2,703	1,386
Minimum per acre, in lbs.	1896-97	1,464	...	525	714	...	...	555	...	525	...	735	...	525	714
	1897-98	1,386	...	1,296	1,386	1,179	...	123	...	741	...	585	...	123	1,386
Average per acre, in lbs.	1896-97	1,704	...	1,109	714	...	...	1,201		638	...	1,503	...	1,322	714
	1897-98	1,943	...	1,372	1,386	1,931	...	810	...	865	...	1,308	...	1,261	1,386

Total number of experiments made up to the close of the year 1897-98	2,104
Total area cut, in acres	706·21
Total crop reaped, in lbs.	939,143
Average outturn per acre, in lbs.	1,329

STATEMENT III.

Bao.

		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	1896-97	...	...	15	...	...	...	3	...	...	...	...	...	18	...
	1897-98 ...	...	...	3	...	...	...	20	...	...	...	...	...	23	...
Total area cut, in acres ...	1896-97 ...	...	...	5·00	...	...	...	1·00	...	...	...	...	...	6·00	...
	1897-98 ...	...	...	1·00	...	...	...	6·67	...	...	...	...	...	7·67	...
Total crop reaped, in lbs. ...	1896-97 ...	...	...	5,517	...	...	...	956	...	...	...	...	...	6,473	...
	1897-98 ...	...	...	1,061	...	..	...	7,221	...	...	...	...	...	8,282	...
Maximum per acre, in lbs. ...	1896-97 ...	...	...	1,389	...	...	...	1,017	...	...	...	...	...	1,389	...
	1897-98 ...	...	...	1,851	...	...	...	2,067	...	...	...	...	...	2,067	...
Minimum per acre, in lbs. ...	1896-97 ...	...	...	624	...	...	...	894	...	...	...	...	...	624	...
	1897-98 ...	...	...	369	...	...	...	309	...	...	...	...	...	309	...
Average per acre, in lbs. ...	1896-97 ...	...	...	1,103	...	...	...	956	...	...	...	...	...	1,079	...
	1897-98 ...	...	...	1,061	...	...	...	1,082	...	...	...	...	...	1,080	...

Total number of experiments made up to the close of the year 1897-98 with *bao dhan* 536
Total area cut, in acres .. .. 174·94
Total crop reaped, in lbs. 215,637
Average o tturn per acre, in lbs. 1,232

STATEMENT IV.

Sylhet Rice.

—	Low-land *aus*.			High-land *aus*.						*Murali*.			*Sail*.			*Sail bura*.			High- and *aman*.						*Kataria*.			Low-land *aman*.		
				Transplanted.			Broadcast.												Transplanted.			Broadcast.								
	In 1896-97.	In 1897-98.	Total of ten years ending 1897-98.	In 1896-97.	In 1897-98.	Total of ten years ending 1897-98.	In 1896-97.	In 1897-98.	Total of ten years ending 1897-98.	In 1896-97.	In 1897-98.	Total of ten years ending 1897-98.	In 1896-97.	In 1897-98.	Total of fifteen years ending 1897-98.	In 1896-97.	In 1897-98.	Total of fifteen years ending 1897-98.	In 1896-97.	In 1897-98.	Total of ten years ending 1897-98.	In 1896-97.	In 1897-98.	Total of ten years ending 1897-98.	In 1896-97.	In 1897-98.	Total of ten years ending 1897-98.	In 1896-97.	In 1897-98.	Total of ten years ending 1897-98.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Number of experiments	..	..	31	2	5	45	2	4	63	..	..	10	28	21	520	3	30	266	2	2	43	..	3	119	3	..	33	41	31	230
Total area cut, in acres	..	..	8·96	0·66	1·35	11·46	0·66	0·98	15·31	..	..	2·56	12·30	7·10	141·02	0·83	8·60	76·33	0·66	0·50	10·77	..	0·57	33·38	0·92	..	8·92	13·45	9·34	67·03
Total crop reaped, in lbs.	..	..	11,229	1,111	2,283	16,237	693	1,368	16,102	..	..	2,825	11,059	11,752	201,210	1,201	12,893	123,058	299	779	14,801	..	987	51,495	1,012	..	12,782	16,695	13,048	87,974
Maximum per acre, in lbs.	..	..	3,218	1,851	2,057	2,432	1,233	2,140	3,786	..	..	2,152	2,961	2,739	4,986	1,728	3,525	4,363	618	2,143	2,468	..	1,731	7,808	2,319	..	2,319	3,333	2,375	3,333
Minimum per acre, in lbs.	..	..	360	1,479	882	480	846	882	204	..	..	420	276	735	159	1,257	432	240	282	1,175	282	..	1,731	198	291	..	291	135	672	135
Average per acre, in lbs.	..	..	1,253	1,683	1,691	1,417	1,050	1,396	1,051	..	..	1,104	899	1,655	1,426	1,447	1,489	1,612	453	1,558	1,374	..	1,731	1,542	1,100	..	1,433	1,241	1,397	1,299

STATEMENT V.

Cachar Rice.

—	*Dumai.*			*Murali.*					*Asra.*			*Sail.*		
				1896-97.		1897-98.								
	1896-97.	1897-98.	Total of ten years ending 1897-98.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Total of ten years ending 1897-98.	1896-97.	1897-98.	Total of ten years ending 1897-98.	1896-97.	1897-98.	Total of fifteen years ending 1897-98.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	1	4	27	6	1	15	9	91	3	5	41	67	41	375
Total area cut, in acres ...	0·33	1·33	8·00	2·00	0·33	4·08	1·67	24·75	0·83	1·17	12·47	21·67	12·00	115·46
Total crop reaped, in lbs. ...	407	1,280	7,785	1,566	411	5,820	2,370	30,348	917	1,868	17,026	16,171	14,311	160,077
Maximum per acre, in lbs. ...	1,221	1,344	1,560	1,401	1,234	2,496	1,680	2,877	1,383	1,920	2,511	1,998	2,436	3,200
Minimum per acre, in lbs. ...	1,221	330	330	162	1,234	615	1,344	162	864	1,380	606	38	618	38
Average per acre, in lbs. ...	1,221	962	973	783	1,234	1,426	1,419	1,226	1,105	1,596	1,365	746	1,193	1,386

STATEMENT VI.

Khasi and Jaintia Hills.

—	Up-land rice.			Low-land rice.		
	1896-97.	1897-98.	Total (16 years ending 1897-98).	1896-97.	1897-98.	Total (16 years ending 1897-98).
1	2	3	4	5	6	7
Number of experiments ...	38	36	703	78	90	907
Total area cut, in acres ...	12·67	12·00	192·97	26·00	30·00	251·01
Total crop reaped, in lbs. ...	9,828	10,697	151,078	28,826	27,438	240,641
Maximum per acre, in lbs. ...	1,356	1,299	2,264	2,832	2,298	3,400
Minimum per acre, in lbs. ...	369	63	40	462	279	192
Average per acre, in lbs. ...	776	891	783	1,108	915	959

STATEMENT VII.

Garo Hills.

—	*Asu.*			*Sali.*		
	1896-97.	1897-98.	Total (16 years ending 1897-98).	1896-97.	1897-98.	Total (16 years ending 1897-98).
1	2	3	4	5	6	7
Number of experiments ...	11	15	137	4	4	37
Total area cut, in acres ...	3·67	5·00	43·75	1·33	1·33	11·55
Total crop reaped, in lbs. ...	2,832	4,802	41,861	2,544	2,462	18,732
Maximum per acre, in lbs. ...	1,806	2,115	2,115	2,961	2,235	2,961
Minimum per acre, in lbs. ...	216	243	216	1,110	1,299	738
Average per acre, in lbs. ...	772	960	957	1,912	1,851	1,622

STATEMENT VIII.

Sugarcane.

District.	Number of experiments.		Total area, in acres.		Total weight of cane, in lbs.		Total weight of juice, in lbs.		Total weight of *gur* (molasses), in lbs.		Weight of *gur* (molasses) per acre, in lbs.		Pounds of juice per 100 lbs. of cane.		Pounds of *gur* (molasses) per 100 lbs. of cane.		Pounds of *gur* (molasses) per 100 lbs. of juice.	
	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Cachar	10	10	0·67	0·98	11,360	13,766	6,045	7,105	1,001	1,326	1,494	1,353	53·21	51·61	8·81	9·63	16·56	18·66
Sylhet	7	5	0·38	0·57	14,753	16,122	5,638	6,447	985	1,290	2,592	2,263	38·21	39·99	6·67	8·00	17·47	20·01
Total Surma Valley	17	15	1·05	1·55	26,113	29,888	11,683	13,552	1,986	2,616	1,891	1,688	44·74	45·34	7·60	8·75	17·00	19·30
Goalpara	3	2	0·19	0·20	8,101	5,993	2,686	1,281	605	428	3,184	2,140	33·15	21·37	7·47	7·14	22·52	33·41
Kamrup	15	8	1·10	0·53	25,089	7,365	10,382	1,658	1,776	331	1,614	625	41·38	22·51	7·08	4·49	17·10	19·96
Darrang	1	2	0·02	0·13	668	1,074	380	510	72	74	3,600	569	56·88	47·49	10·78	6·89	18·95	14·51
Nowgong	4	...	0·26	...	13,700	...	6,391	...	1,222	...	4,700	...	46·63	...	8·91	...	19·12	...
Sibsagar	6	3	0·34	0·03	11,194	2,623	5,579	1,630	1,110	226	3,265	753	49·84	62·14	9·91	8·61	19·89	13·86
Lakhimpur	24	24	1·61	1·60	45,549	37,340	13,173	24,511	4,309	4,606	2,676	2,879	28·92	65·63	9·46	12·33	32·71	18·79
Total Brahmaputra Valley ...	53	39	3·52	2·49	104,307	54,401	38,591	29,590	9,094	5,665	2,583	2,275	36·99	54·39	8·71	10·41	23·56	19·14
Total for the province ...	70	54	4·57	4·04	130,420	84,289	50,274	43,142	11,080	8,281	2,424	2,049	38·54	51·17	8·49	9·82	22·04	19·19
Total for 1897-98	54		4·04		84,289		43,142		8,281		2,049		51·17		9·82		19·19	
„ „ 1896-97	70		4·57		130,420		50,274		11,080		2,424		38·54		8·49		22·04	
„ „ 1895-96	101		8·80		139,707		65,685		11,981		1,361		47·01		8·57		18·24	
„ „ 1894-95	115		7·35		189,662		90,611		16,560		2,253		47·77		8·73		18·27	
„ „ 1893-94	116		10·755		157,407		74,282		11,525		1,071		47·19		7·32		15·51	
„ „ 1892-93	92		6·32		120,996		55,124		10,712		1,695		45·55		8·85		19·43	
„ „ 1891-92	95		10·99		140,760		72,064		13,404		1,225		51·19		9·56		18·08	
„ „ 1890-91	121		9·32		164,733		81,602		14,600		1,566		49·53		8·86		17·89	
„ „ 1889-90	131		14·18		228,189		106,564		16,625		1,172		46·69		7·28		15·60	
„ „ 1888-89	150		15·47		245,680		120,476		21,259		1,374		49·03		8·65		17·64	
„ „ 1887-88	148		21·26		346,412		171,663		30,499		1,434		49·55		8·80		17·77	
„ „ 1886-87	128		24·00		409,766		208,863		34,437		1,435		50·97		8·40		16·49	
„ „ 1885-86	93		16·05		370,606		155,649		26,159		1,629		42·00		7·06		16·81	
„ „ 1884-85	151		20·59		455,848		206,738		35,701		1,734		45·35		7·83		17·27	
„ „ 1883-84	80		... ..		210,329		97,159		18,970		.....		46·19		9·02		19·52	
Total	1,645		173·695		3,394,804		1,599,896		281,853		1,513		47·12		8·30		17·61	

STATEMENT IX.

Miscellaneous Crops.

	Matikalai (Phaseolus mungo, var, radiatus).																		Mung (Phaseolus mungo).						Rapeseed.			
	Cachar.		Sylhet.		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar		Lakhimpur.		Total up to the end of		Kamrup.		Sibsagar.		Total up to the end of		Sylhet.		Total up to the end of	
	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Number of experiments	5	5	...	1	1	...	11	1	9	8	16	14	7	1	35	31	1,918	1,979	6	1	...	1	145	147	1	2	30	32
Total area experimented upon, in acres ...	0·90	1·00	...	0·28	0·33	...	3·53	0·33	2·21	2·17	5·33	4·67	2·17	0·33	11·66	10·33	117·72	136·83	1·46	0·07	...	0·33	31·99	32·39	0·33	0·57	14·88	15·45
Total crop gathered, in lbs.	524	422	...	31	29	...	730	62	625	889	1,613	1,249	1,349	288	7,749	8,603	54,429	65,973	240	2	...	331	10,535	10,868	136	450	5,158	5,617
Maximum per acre, in lbs.	1,035	504	...	110	87	...	525	188	432	957	555	555	993	864	1,350	1,542	2,100	2,100	339	29	...	1,003	840	1,003	412	975	1,028	1,028
Minimum per acre, in lbs.	468	324	...	110	87	...	54	188	60	135	24	111	72	864	252	270	18	18	77	29	...	1,003	42	29	412	660	36	36
Average per acre, in lbs.	582	422	...	110	87	...	207	188	283	407	302	267	628	864	664	833	462	482	164	29	...	1,003	329	335	412	805	346	363

	Linseed.				Til (sesamum).				Cotton.				Potato.				Jute.						*Khesari* (pulses).			
	Sylhet.		Total up to the end of		Kamrup.		Total up to the end of		Garo Hills.		Total up to the end of		Lakhimpur.		Total up to the end of		Sylhet.		Goalpara.		Total up to the end of		Kamrup.		Total up to the end of	
	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.
	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
Number of experiments	4	5	30	35	7	2	101	103	10	10	38	48	...	...	7	7	...	13	...	26	9	48	...	1	...	1
Total area experimented upon, in acres ...	1·11	1·47	6·17	7·64	2·06	0·40	28·32	28·72	3·33	3·33	13·40	16·73	...	...	1·79	1·79	...	3·08	...	7·57	2·41	13·06	...	0·07	...	0·07
Total crop gathered, in lbs.	354	652	2,200	2,852	753	167	8,154	8,321	1,613	1,146	4,035	5,181	...	...	4,754	4,754	...	3,517	...	8,303	2,596	14,416	...	33	...	33
Maximum per acre, in lbs.	618	896	4,020	4,020	678	495	1,058	1,058	987	753	987	987	...	...	6,171	6,171	...	1,739	...	2,289	2,500	2,500	...	471	...	471
Minimum per acre, in lbs.	252	218	150	150	129	30	46	30	78	93	62	62	...	...	981	981	...	66	...	84	423	84	...	471	...	471
Average per acre, in lbs.	319	444	356	373	365	417	288	289	484	344	301	309	...	...	2,656	2,656	...	1,142	...	1,097	1,077	1,104	...	471	...	471

STATEMENT X.

Mustard.

	Cachar.		Sylhet.		Total Surma Valley.		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total Brahmaputra Valley.		Total for the province.		Total for the province up to the end of	
	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Number of experiments	9	10	11	17	20	27	12	5	20	18	8	5	15	...	5	8	15	14	75	125	95	152	2,136	2,288
Total area experimented upon, in acres	2·16	2·67	3·43	4·06	5·59	6·73	4·00	1·67	6·67	5·92	2·49	1·67	5·00	...	1·67	2·40	5·00	4·50	24·83	41·00	30·42	47·73	713·13	760·86
Total crop gathered, in lbs.	1,237	1,557	1,193	2,815	2,430	4,372	2,221	1,236	3,330	2,346	1,112	860	2,022	...	1,083	1,338	3,106	6,210	12,874	24,864	15,304	29,236	361,921	391,157
Maximum per acre, in lbs.	1,176	1,200	654	1,689	1,176	1,689	987	1,110	777	648	717	810	720	...	924	1,605	1,005	2,190	1,005	2,190	1,176	2,190	2,100	2,190
Minimum per acre, in lbs.	216	444	81	21	81	21	315	168	105	198	171	192	159	...	432	123	171	648	105	123	81	21	21	21
Average per acre, in lbs.	572	583	347	693	434	649	555	740	499	396	447	515	404	...	648	557	621	1,380	518	606	503	612	507	514

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ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

FOR

1898-99.

BY

L. J. KERSHAW, Esq., I.C.S.,

OFFICIATING DIRECTOR, DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM.

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FROM

L. J. KERSHAW, ESQ., I.C.S.,

Offg. Director, Department of Land Records and Agriculture, Assam,

TO

THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Shillong, the 4th July 1899.

SIR,

I HAVE the honour to submit the Annual Note on Crop Experiments carried out in Assam during the year 1898-99.

I have the honour to be,

SIR,

Your most obedient Servant,

L. J. KERSHAW,

Offg. Director, Department of Land Records and Agriculture, Assam.

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ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

FOR

1898-99.

Introductory.

THE Crop Note annually submitted by this Department has hitherto dealt with experiments made by officers not lower in rank than mauzadars and head constables. With the introduction of the mauza-book in certain districts in the Assam Valley, existing rules which prohibit supervisor kanungos and mandals from conducting crop experiments have been cancelled, and in the year under report a large number of experiments in various crops have been under the Mauza-book Rules carried out by these officers. It has been, however, thought advisable to deal with these for the present at least separately, and to keep their results distinct from the results of experiments carried out under the ordinary Crop-cutting Rules of the province.

Nature of experiments.

2. Experiments were made as usual during the year to ascertain the outturn of—

A.—Rice of various kinds.

B.—Sugarcane.

C.—Miscellaneous crops.

D.—Mustard.

In estimating the outturn of crops the maund has been taken at 82⅔ lbs. and the *bigha* at one-third of an acre.

Number of experiments.

3. The following statement shows the number of experiments carried out in each district, compared with the figures of the preceding year :

Number of Experiments.

Crops.	Cachar.		Sylhet.		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Khasi and Jaintia Hills.		Garo Hills.		Total for the province.	
	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-8.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-9	1898-99.	1897-98.	1898-99.
1	2		3		4		5		6		7		8		9		10		11		12	
Sali ...	41	46	21	11	17	8	15	11	18	41	53	27	41	37	36	46	90	70	4	4	331	301
Ahu ...	28	8	9	3	18	5	4	5	2	...	29	23	5	...	27	30	36	28	15	16	173	123
Bao ...	5	5	36	15	...	...	3	5	...	...	20	5	...	...	...	...	...	...	...	...	64	30
Sailbura ...	...	...	30	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	30	4
Cane ...	10	7	5	5	2	3	8	4	2	1	...	5	3	3	24	22	...	...	...	...	54	50
Linseed ...	...	...	5	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	2
Rapeseed ...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Mung ...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	2	...
Til ...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Cotton ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	12	10	12
Matikalai ...	5	3	1	...	...	2	1	...	8	1	14	...	1	3	34	34	...	...	...	...	65	43
Mustard ...	10	4	17	6	5	6	18	12	5	...	...	...	8	7	14	14	...	...	...	...	77	49
Potato ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jute ...	...	...	13	...	26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	39	...
Kheari (pulses)	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Total ...	99	73	139	46	68	24	53	37	30	43	116	65	59	50	132	146	126	98	29	32	851	614

There was a decrease in the number of experiments carried out during the year in all districts except Darrang, Lakhimpur, and the Garo Hills, the decrease being largest in Sylhet (46 against 139). The number of experiments carried out in Kamrup was specially deficient.

Results of experiments.

4. The statements, I to X, annexed compare the results of experiments made with different crops in the two years 1897-98 and 1898-99; they also exhibit the aggregate results of all experiments made with each crop up to the close of the latter year.

A.—RICE (STATEMENTS I TO VII).

Rice experiments.

5. The figures of outturn shown under this head represent the yield of unhusked rice.

I.—BRAHMAPUTRA VALLEY (STATEMENTS I, II, AND III).

Brahmaputra Valley rice experiments.

In *sali* (late transplanted rice), the most important crop grown in the Brahmaputra Valley, the largest number of experiments (4,430) have been made. According to the results of these experiments, the average yield per acre is over 19 maunds. The results of experiments in the two varieties of *sali* (*bar dhan* and *lahi dhan*) have been separately recorded for the past eleven years only, and the results of last year's experiments continue to be in accord with those of experiments in previous years, as well as with what is generally known regarding the comparative productiveness of the two varieties—that *bar dhan* is much more prolific than the finer variety, *lahi dhan*. The average outturns obtained from these experiments were for the former about 21½ maunds and for the latter 15½ maunds per acre. The average outturn of *ahu* (early rice broadcast) obtained from the experiments made up to date is about 16¼ maunds per acre, and that of *bao* (low-land broadcast) is nearly 15 maunds per acre. The average for rice of all kinds grown in the valley is nearly 18 maunds per acre.

II.—SYLHET (STATEMENT IV).

Sylhet rice experiments.

Altogether 531 experiments have been made with the *sail* (or late transplanted rice) of Sylhet, which give an average outturn of over 17¼ maunds per acre. Two hundred and seventy experiments were made with *sail-bura*, which is only slightly inferior in point of outturn to the *bar dhan* of the Brahmaputra Valley, and gives an average outturn of about 20 maunds per acre. This is an irrigated crop sown about October, transplanted in January, and reaped in April.

The average outturn given by the results of experiments made with early rice (*aus* and *murali*) is 14¾ maunds per acre, and that with the varieties of late rice (*aman* and *kataria*) is about 17 maunds per acre. The average outturn of all kinds of rice grown in Sylhet is about 17½ maunds per acre.

III.—CACHAR (STATEMENT V).

Cachar rice experiments.

Though the result of 1898-99 shows some improvement, the number of experiments made in this district has been few. They give an average outturn for *sail* of about 17 maunds per acre, for *dumai* and *murali* (early rice) of about 14½ maunds, for *asra* (late broadcast rice) of nearly 16½ maunds, and for all rice grown in the district of 16¼ maunds.

IV.—HILL RICE (STATEMENTS VI AND VII).

Hill rice experiments.

The varieties of rice raised in the Khasi and Jaintia Hills are less productive than those grown in the plains, the average outturn for the district being over 10½ maunds per acre only. The figures shown against the Garo Hills include the results of experiments made in the plains portion of the district, the average outturn for the district being over 13¼ maunds per acre.

B.—SUGARCANE (STATEMENT VIII).

Sugarcane experiments.

6. The experiments made in this crop have been up to date 1,695 in number.

The following are the results up to the end of 1898-99:

(1) The average weight of *gur* (molasses) per acre is 1,644lbs., or about 20 maunds.

(2) Cane yields 47·32 per cent. of its weight of juice and 8·36 per cent. of its weight of *gur* (molasses).

(3) The juice yields 17·68 per cent. of its weight of *gur* (molasses).

C.—MISCELLANEOUS CROPS (STATEMENT IX).

Miscellaneous crops.

7. It is to be regretted that no experiments were made during the year in potatoes in the Khasi and Jaintia Hills or in jute in Sylhet or Goalpara.

Although no crop-cuttings were made, potatoes were experimentally cultivated, and the yield recorded in several cases.

D.—MUSTARD (STATEMENT X).

Mustard experiments.

8. Since experiments with mustard were resumed in 1892-93, 506 experiments in the Brahmaputra Valley have been made, the total area cut being 156·28 acres, the total crops gathered 98,015lbs., and the average outturn per acre 627lbs., or 7½ maunds.

In the last year's note the figures shown for the Brahmaputra Valley were not accurate, and they have since been revised.

In the Surma Valley 129 experiments have been made, the total area cut being 34·91 acres, the total outturn 15,707lbs., and the average yield per acre 449lbs., or a little below 5½ maunds.

GENERAL REMARKS.

Rejected experiments.

9. During the year a number of experiments have been rejected, owing to the area experimented upon being over or under one *bigha* in the case of rice, mustard and other miscellaneous crops, or less than ⅛th of a *bigha*, or over ½ a *bigha* in the case of sugarcane. Some experiments which gave apparently impossible results have also been rejected.

The following statement shows the number of experiments which were rejected during the years 1897-98 and 1898-99:

District.	Rice.				Cane.				Mustard.				Miscellaneous crops.			
	Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.		Number of rejected experiments.		Area of rejected experiments, in acres.	
	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Cachar	39	22	13·67	3·75	...	...	...	...	...	1	...	0·16	...	1	...	0·16
Sylhet	...	35	...	15·09	...	9	...	0·55	...	17	...	4·41	...	4	...	0·38
Goalpara	...	1	...	0·33	...	1	...	0·06	...	...	...	...	...	...	...	...
Kamrup	...	8	...	2·53	...	1	...	0·05	...	2	...	0·13	...	4	...	0·26
Nowgong	...	3	...	1·00	...	...	...	...	...	...	...	...	...	...	...	...
Sibsagar	2	...	0·67	...	1	...	0·03	...	...	...	...	...	3	...	0·73	...
Total	41	89	14·34	20·70	1	11	0·03	0·67	...	20	...	4·70	3	9	0·73	0·80

Experiments by supervisor kanungos and mandals.

10. During the year a large number of experiments were carried out in the districts of Darrang, Sibsagar, and Lakhimpur (where the mauza-book has been introduced) by supervisor kanungos and selected mandals.

The results of these experiments have been shown separately for each subdivision. The following statement compares for different crops the results of these experiments with those of experiments carried out under the ordinary Crop-cutting Rules of the province:

	Results of experiments under the ordinary rules.	Results obtained by Supervisor kanungos and Mandals.
	Outturn per acre, in lbs.	
Ahu	1,334	1,183
Bar dhan	1,761	1,520
Lahi dhan	1,268	1,170
Matikalai	487	353
Mustard	516	525
Sugarcane	1,644	2,078

The results obtained have been entered in the mauza-book, and will be utilised for the purposes of assessment.

11. The names of the superior officers who conducted experiments during the year are given in the statement below:

Experimenting officers.

Name.	Rice.	Cane.	Mustard.	Miscellaneous.	Total.
1	2	3	4	5	
Babu Pradyumna Charan Das, Tahsildar, Silchar	3	...	...	...	3
„ Haris Chandra Sen, Tahsildar, Hailakandi	6	...	...	...	6
„ Sarvananda Das, Extra Assistant Commissioner, Habiganj ...	...	1	...	...	1
„ Akshaya Kumar Chaturji, Extra Assistant Commissioner, Sunamganj.	4	...	...	...	4
„ Giris Chandra Nag, M.A., B.L., Extra Assistant Commissioner, Sylhet.	3	...	...	...	3
Maulvi Muhammad Abdulla, B.A., Sub-Deputy Collector, Maulvi Bazar,	4	1	1	...	6
Babu Purna Chandra Mitra, Sub-Deputy Collector, Sylhet ...	7	...	...	2	9
„ Ram Tarak Rai Barman, Special Sub-Registrar, Karimganj...	1	...	...	...	1
G. Balthasar, Esq., Subdivisional Officer, Goalpara	...	1	2	...	3
Munshi Faizuddin Ahmad, Sub-Deputy Collector, in charge of the Bijni tahsil.	...	...	1	...	1
Babu Janaki Nath Das, B.A., Sub-Deputy Collector, Dhubri ...	2	...	...	...	2
Rai Madhab Chandra Bardalai, Bahadur, L.L., Subdivisional Officer, Barpeta.	6	...	...	...	6
Babu Rajani Kanta Bardalai, B.A., Sub-Deputy Collector, Gauhati.	...	...	1	...	1
„ Ganga Ram Das, Tahsildar, Baroma, Kamrup	...	2	...	...	2
„ Ratna Kanta Barua, Tahsildar, Bajali, Kamrup	...	1	...	...	1
„ Jajnesvar Das Gupta, B.A., Sub-Deputy Collector, Mangaldai	7	...	...	...	7
„ Mohendra Chandra De, M.A., B.L., Sub-Deputy Collector, Tezpur.	1	...	...	...	1
„ Rama Kanta Barua, B.A., Sub-Deputy Collector, in charge, Mangaldai tahsil.	4	...	...	...	4
„ Rabi Chandra Sarma, Tahsildar, Tezpur	2	...	...	...	2
„ Bhabani Charan Sarma, Tahsildar, Patharughat, Darrang ...	2	1	...	...	3
„ Ganga Nath Sarma, Tahsildar, Chutia, Darrang ...	2	...	...	...	2
„ Santi Ram Hazarika, Tahsildar, Nowgong	4	1	...	...	5
„ Gunahash Gosvami, Tahsildar, Roha, Nowgong	5	1	...	...	6
„ Fedela Ram Das, Officiating Tahsildar, Samaguri, Nowgong	1	...	...	...	1
Munshi Didar-Uddin Ahmad, Sub-Deputy Collector, Sibsagar ...	...	...	1	2	3
Babu Sarat Chandra Lahiri, B.A., B.L., Sub-Deputy Collector, Golaghat.	5	...	1	...	6
„ Bistu Ram Barua, Tahsildar, Jorhat	2	...	...	...	2
„ Dandadhar Barua, Tahsildar, Golaghat	4	1	...	...	5
„ Someswar Sarma Barua, Tahsildar, Nomtidol, Sibsagar ...	1	...	...	...	1
„ Hem Chandra Gosvami, Sub-Deputy Collector, Dibrugarh ...	2	1	...	...	3
Mr. Bhupal Chandra Basu, B.A., M.R.A.C., M.R.A.S. (Eng.), Assistant to the Director, Department of Land Records and Agriculture.	6	...	...	...	6

L. J. KERSHAW,

Offg. Director, Department of Land Records and Agriculture, Assam.

APPENDICES.

Appendix A.

STATEMENT I.

Sali.

—		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Bar dhan.	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments.	1897-98	13	4	10	5	13	...	31	22	37	4	36	...	140	35
	1898-99	8	...	2	9	30	11	16	11	28	9	36	10	120	50
Total area cut, in acres.	1897-98	4'33	1'33	2'53	1'67	4'17	...	10'33	7'33	12'33	1'33	12'00	...	45'70	11'67
	1898-99	2'66	...	0'66	3'00	10'00	3'66	5'32	3'66	9'33	3'01	12'00	3'33	39'97	16'66
Total crop reaped, in lbs.	1897-98	8,963	1,181	3,710	2,288	7,755	...	13,606	7,953	18,152	1,458	20,446	...	72,632	13,880
	1898-99	5,005	...	1,085	4,165	20,510	6,136	10,152	6,253	14,287	2,840	20,373	4,065	71,412	23,459
Maximum per acre, in lbs.	1897-98	2,856	1,134	2,055	1,461	2,592	...	2,313	1,881	2,640	1,512	2,796	...	2,856	1,881
	1898-99	2,424	...	1,749	2,238	2,967	2,097	2,868	2,962	3,486	1,203	2,715	1,604	3,486	2,962
Minimum per acre, in lbs.	1897-98	684	462	555	1,296	636	...	648	246	501	864	741	...	501	246
	1898-99	1,110	...	1,506	759	678	1,086	630	616	845	777	864	864	630	616
Average per acre, in lbs.	1897-98	2,070	888	1,466	1,370	1,859	...	1,317	1,085	1,472	1,096	1,704	...	1,589	1,103
	1898-99	1,881	...	1,644	1,388	2,051	1,676	1,907	1,708	1,531	943	1,697	1,220	1,786	1,408

Total number of experiments made up to the close of the year 1898-99 with *sali dhan* ...	4,430
Total area cut, in acres	1,435'71
Total crop reaped, in lbs.	2,265,879
Average outturn per acre, in lbs	1,578

For eleven years, 1887-88 *to* 1898-99.

—	*Bar dhan.*	*Lahi dhan.*
1	2	3
Total number of experiments made	6,771	555
Total area cut, in acres	553'75	173'42
Total crop reaped, in lbs.	975,351	219,805
Average outturn per acre, in lbs.	1,761	1,268

STATEMENT II.

Ahu.

—		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments...	1897-98	18	...	3	1	2	...	29	...	5	...	27	...	84	1
	1898-99	5	...	5	...	...	...	28	...	...	...	30	...	68	...
Total area cut, in acres ...	1897-98	6'00	...	0'73	0'07	0'67	...	9'67	...	1'67	...	9'00	...	27'74	0'07
	1898-99	1'66	...	1'66	...	...	...	9'33	...	...	...	10'00	...	22'65	...
Total crop reaped, in lbs...	1897-98	11,636	...	1,002	97	1,294	...	7,836	...	1,444	...	11,771	...	34,983	97
	1898-99	2,662	...	1,919	...	...	...	14,879	...	...	...	13,630	...	33,090	...
Maximum per acre, in lbs	1897-98	2,481	...	1,605	1,386	2,703	...	1,758	...	1,050	...	2,562	...	2,703	1,386
	1898-99	1,759	...	1,632	...	...	...	2,374	...	...	...	2,666	...	2,666	...
Minimum per acre, in lbs	1897-98	1,386	...	1,298	1,386	1,179	...	123	...	741	...	585	...	123	1,386
	1898-99	1,283	...	381	...	...	...	752	...	...	...	512	...	381	...
Average per acre, in lbs...	1897-98	1,943	...	1,372	1,386	1,931	...	810	...	865	...	1,308	...	1,261	1,386
	1898-99	1,603	...	1,156	...	...	...	1,594	...	...	...	1,363	...	1,461	...

Total number of experiments made up to the close of the year 1898-99	2,172
Total area cut, in acres	728'86
Total crop reaped, in lbs.	972,233
Average outturn per acre, in lbs.	1,334

STATEMENT III.

Bao.

—		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	1897-98 ...	...	...	3	...	...	...	20	...	...	...	...	...	23	...
	1898-99 ...	...	...	5	...	...	...	5	...	...	...	...	...	10	...
Total area cut, in acres ...	1897-98 ...	...	...	1·00	...	...	...	6·67	...	...	...	...	...	7·67	...
	1898-99 ...	...	...	1·66	...	...	...	1·66	...	...	...	...	...	3·32	...
Total crop reaped, in lbs. ...	1897-98 ...	...	...	1,061	...	...	...	7,221	...	...	...	...	...	8,282	...
	1898-99 ...	...	...	1,464	...	...	...	2,057	...	...	...	...	...	3,521	...
Maximum per acre, in lbs. ...	1897-98 ...	...	...	1,851	...	...	...	2,067	...	...	...	...	...	2,067	...
	1898-99 ...	...	...	1,665	...	...	...	3,054	...	...	...	...	...	3,054	...
Minimum per acre, in lbs. ...	1897-98 ...	...	...	369	...	...	...	309	...	...	...	...	...	309	...
	1898-99 ...	...	...	444	...	...	...	306	...	...	...	...	...	306	...
Average per acre, in lbs. ...	1897-98 ...	...	...	1,061	...	...	...	1,082	...	...	...	...	...	1,080	...
	1898-99 ...	...	...	882	...	...	...	1,239	...	...	...	...	...	1,060	...

Total number of experiments made up to the close of the year 1898-99 with *bao dhan* 546
Total area cut, in acres ... ... 178·26
Total crop reaped, in lbs. 219,158
Average outturn per acre, in lbs. 1,229

STATEMENT IV.

Sylhet rice.

	Low-land *aus*.			High-land *aus*.						*Murali*.			*Sail*.			*Sailbura*.			High-land *aman*.						*Kataria*.			Low-land *aman*.		
				Transplanted.			Broadcast.												Transplanted.			Broadcast.								
	In 1897-98.	In 1898-99.	Total of eleven years ending 1898-99.	In 1897-98.	In 1898-99.	Total of eleven years ending 1898-99.	In 1897-98.	In 1898-99.	Total of eleven years ending 1898-99.	In 1897-98.	In 1898-99.	Total of eleven years ending 1898-99.	In 1897-98.	In 1898-99.	Total of sixteen years ending 1898-99.	In 1897-98.	In 1898-99.	Total of sixteen years ending 1898-99.	In 1897-98.	In 1898-99.	Total of eleven years ending 1898-99.	In 1897-98.	In 1898-99.	Total of eleven years ending 1898-99.	In 1897-98.	In 1898-99.	Total of eleven years ending 1898-99.	In 1897-98.	In 1898-99.	Total of eleven years ending 1898-99.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Number of experiments	..	..	31	5	..	45	4	3	66	..	..	10	21	11	531	30	4	270	2	..	43	3	..	119	..	1	34	31	14	244
Total area cut, in acres	..	..	8·96	1·35	..	11·46	0·98	1·00	16·31	..	..	2·55	7·10	3·66	144·68	8·60	1·33	77·66	0·50	..	10·77	0·57	..	33·38	..	0·33	9·25	9·34	4·66	71·69
Total crop reaped, in lbs.	..	..	11,229	2,283	..	16,237	1,368	1,239	17,341	..	..	2,825	11,752	5,255	206,465	12,803	2,108	135,166	779	..	14,801	987	..	51,495	..	475	13,257	13,048	6,341	93,415
Maximum per acre, in lbs.	..	..	3,218	2,057	..	2,432	2,140	1,542	3,786	..	..	2,152	2,739	2,022	4,986	3,525	1,343	4,363	2,143	..	2,468	1,731	..	7,808	..	1,439	2,319	2,375	1,950	3,333
Minimum per acre, in lbs.	..	..	360	882	..	480	882	724	204	..	..	420	735	370	159	432	765	240	1,175	..	282	1,731	..	198	..	1,439	291	672	397	135
Average per acre, in lbs.	..	..	1,353	1,691	..	1,417	1,396	1,239	1,063	..	..	1,104	1,655	1,436	1,427	1,489	1,585	1,612	1,558	..	1,374	1,731	..	1,542	..	1,439	1,433	1,397	1,361	1,303

STATEMENT V.

Cachar rice.

—	Dumai.			Murali.					Asra.			Sail.		
				1897-98.		1898-99.								
	1897-98.	1898-99.	Total of eleven years ending 1898-99.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Total of eleven years ending 1898-99.	1897-98.	1898-99.	Total of eleven years ending 1898-99.	1897-98.	1898-99.	Total of eleven years ending 1898-99.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	4	1	28	15	9	6	1	98	5	5	46	41	46	421
Total area cut, in acres ...	1·33	0·33	8·33	4·08	1·67	2·00	0·33	27·08	1·17	1·66	14·13	12·00	15·33	130·79
Total crop reaped, in lbs. ...	1,280	482	8,267	5,820	2,370	2,261	920	33,529	1,868	2,083	19,109	14,311	20,436	180,513
Maximum per acre, in lbs. ...	1,344	1,460	1,560	2,496	1,680	1,353	2,760	2,877	1,920	1,542	2,511	2,436	2,565	3,200
Minimum per acre, in lbs. ...	330	1,460	330	615	1,344	903	2,760	162	1,380	738	606	618	576	38
Average per acre, in lbs. ...	962	1,460	992	1,426	1,419	1,130	2,788	1,238	1,596	1,255	1,352	1,193	1,333	1,380

STATEMENT VI.

Khasi and Jaintia Hills rice.

—	Up-land rice.			Low-land rice.		
	1897-98.	1898-99.	Total (17 years ending 1898-99).	1897-98.	1898-99.	Total (17 years ending 1898-99).
1	2	3	4	5	6	7
Number of experiments	36	28	731	90	70	977
Total area cut, in acres	12·00	9·33	202·30	30·00	23·33	274·34
Total crop reaped, in lbs.	10,697	5,062	156,740	27,438	18,004	258,645
Maximum per acre, in lbs.	1,299	1,505	2,264	2,298	2,127	3,400
Minimum per acre, in lbs.	63	278	40	279	61	61
Average per acre, in lbs.	891	542	771	915	771	942

STATEMENT VII.

Garo Hills rice.

—	Asu.			Sail.		
	1897-98.	1898-99.	Total (17 years ending 1898-99).	1897-98.	1898-99.	Total (17 years ending 1898-99).
1	2	3	4	5	6	7
Number of experiments	15	16	153	4	4	41
Total area cut, in acres	5·00	5·33	49·08	1·33	1·33	12·88
Total crop reaped, in lbs.	4,802	5,627	47,488	2,462	1,753	20,485
Maximum per acre, in lbs.	2,115	2,105	2,115	2,235	1,864	2,961
Minimum per acre, in lbs.	243	271	216	1,299	444	444
Average per acre, in lbs.	960	1,056	967	1,851	1,318	1,590

STATEMENT VIII.

Sugarcane.

District.	Number of experiments.		Total area, in acres.		Total weight of cane, in lbs.		Total weight of juice, in lbs.		Weight of *gur* (molasses).		Weight of *gur* (molasses) per acre, in lbs.		Pounds of juice per 100 lbs. of cane.		Pounds of *gur* (molasses) per 100 lbs. of cane.		Pounds of *gur* (molasses) per 100 lbs. of juice.	
	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Cachar	10	7	0·98	0·78	13,766	25,016	7,105	15,599	1,326	3,015	1,353	3,865	51·61	62·36	9·63	15·45	18·66	24·78
Sylhet	5	5	0·57	0·41	16,122	9,161	6,447	5,084	1,290	1,015	2,263	2,475	39·99	55·49	8·00	11·07	20·01	19·96
Total Surma Valley	15	12	1·55	1·19	29,888	34,177	13,552	20,683	2,616	4,030	1,688	3,386	45·34	60·51	8·75	11·78	19·30	19·48
Goalpara	2	3	0·20	0·26	5,993	4,564	1,281	1,843	428	403	2,140	1,550	21·37	40·38	7·14	8·83	33·41	21·86
Kamrup	8	4	0·53	0·26	7,365	3,881	1,658	1,239	331	234	625	900	22·51	31·93	4·49	6·05	19·96	18·88
Darrang	2	1	0·13	0·06	1,074	1,347	510	685	74	103	569	1,716	47·49	50·85	6·89	7·64	14·51	15·03
Nowgong	...	5	...	0·40	...	10,069	..	4,6.6	...	724	...	1,810	...	45·94	...	72·00	...	15·65
Sibsagar	3	3	0·10	0·20	2,623	4,657	1,630	2,791	226	416	2,260*	2,080	62·14	59·92	8·61	8·93	13·86	14·94
Lakhimpur	24	22	1·60	1·46	37,346	35,416	24,511	19,426	4,606	4,171	2,879	2,857	65·63	54·85	12·33	11·77	18·79	21·47
Total Brahmaputra Valley ...	39	38	2·56	2·64	54,401	59,934	29,590	30,610	5,665	6,051	2,213*	2,292	54·39	51·07	10·41	10·09	19·14	19·76
Total for the province	54	50	4·11*	3·83	84,289	94,111	43,142	51,293	8,281	10,081	2,215*	2,632	51·17	54·50	9·82	10·71	19·19	1 ·65
Total for 1898-99	50		3·83		94,111		51,293		10,081		2,632		54·50		10·71		19·65	
,, ,, 1897-98	54		4·11*		84,289		43,142		8,281		2,015*		51·17		9·82		19·19	
,, ,, 1896-97	70		4·57		130,420		50,274		11,080		2,424		38·54		8·49		22·04	
,, ,, 1895-96	101		8·80		139,707		65,685		1,081		1,361		47·01		8·57		18·24	
,, ,, 1894-95	115		7·35		189,062		90,611		16,560		2,253		47·77		8·73		18·27	
,, ,, 1893-94	116		10·75		157,407		74,282		11,525		1,071		47·19		7·32		15·51	
,, ,, 1892-93	92		6·32		120,906		55,124		10,712		1,695		45·55		8·85		19·43	
,, ,, 1891-92	95		10·99		140,760		72,064		13,464		1,225		51·19		9·56		18·68	
,, ,, 1890-91	121		9·32		164,733		81,602		14,600		1,566		49·53		8·86		17·89	
,, ,, 1889-90	131		14·18		228,189		106,564		16,625		1,172		46·69		7·28		15·60	
,, ,, 1888-89	150		15·47		245,686		120,476		21,259		1,374		49·03		8·65		17·64	
,, ,, 1887-88	148		21·26		340,412		171,663		30,499		1,434		49·55		8·80		17·77	
,, ,, 1886-87	128		24·00		409,700		208,873		34,437		1,435		50·97		8·40		16·49	
,, ,, 1885-86	93		16·05		370,606		155,649		26,159		1,629		42·00		7·06		16·81	
,, ,, 1884-85	151		20·59		455,848		206,738		35,701		1,734		45·35		7·83		17·27	
,, ,, 1883-84	80		...		210,329		97,159		18,9 0		...		46·19		9·02		19·52	
Total	1,6 5		177·59		3,488,915		1,651,189		291,934		1,644		47·32		8·36		17·68	

STATEMENT IX.

Miscellaneous Crops.

	Matikalai (Phaseolus mungo, var, radiatus).																		Mung (Phaseolus mungo).						Rapeseed.			
	Cachar.		Sylhet.		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total up to the end of		Kamrup.		Sibsagar.		Total up the to end of		Sylhet.		Total up to the end of	
	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Number of experiments	5	3	1	...	...	2	1	...	8	1	14	...	1	3	31	34	1,979	2,022	1	...	1	...	147	147	2	...	32	32
Total area experimented upon, in acres	1·00	1·00	0·28	...	...	0·66	0·33	...	2·17	0·33	4·67	...	0·33	1·00	10·33	11·33	136·83	151·15	0·07	...	0·33	...	32·39	32·39	0·57	...	15·45	15·45
Total crop gathered, in lbs. ...	422	581	31	...	...	308	62	...	889	61	1,249	...	288	189	8,603	6,479	65,973	73,591	2	...	331	...	10,868	10,868	459	...	5,617	5,617
Maximum per acre, in lbs. ...	504	695	110	...	...	814	188	...	957	185	555	...	864	328	1,542	1,356	2,100	2,100	29	...	1,003	...	1,003	1,003	975	...	1,028	1,028
Minimum per acre, in lbs. ...	324	426	116	...	...	111	188	...	135	185	111	...	864	107	270	123	18	18	29	...	1,003	...	29	29	660	...	36	36
Average per acre, in lbs.	422	581	110	...	...	466	188	...	407	185	267	...	864	189	833	571	482	487	29	...	1,003	...	335	335	805	...	363	363

	Linseed.				*Til* (seasmum).				Cotton.				Potato.				Jute.						*Khesari* (pulses).			
	Sylhet.		Total up to the end of		Kamrup.		Total up to the end of		Garo Hills.		Total up to the end of		Lakhimpur.		Total up to the end of		Sylhet.		Goalpara.		Total up to the end of		Kamrup.		Total up to the end of	
	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.
	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
Number of experiments	5	2	35	37	2	...	103	103	10	12	43	60	...	...	7	7	13	...	26	...	48	48	1	...	1	1
Total area experimented upon, in acres	1·47	0·66	7·64	8·30	0·20	...	28·72	28·72	3·33	4·00	16·73	20·73	...	...	1·79	1·79	3·08	...	7·57	...	13·06	13·06	0·07	...	0·07	0·07
Total crop gathered, in lbs. ...	652	709	2,852	3,561	167	...	8,321	8,321	1,146	1,484	5,181	6,665	...	...	4,754	4,754	3,817	...	8,303	...	14,416	14,416	33	...	33	33
Maximum per acre, in lbs. ...	856	1,209	4,020	4,020	495	...	1,058	1,058	753	944	987	987	...	...	6,171	6,171	1,739	...	2,289	...	2,500	2,500	471	...	471	471
Minimum per acre, in lbs. ...	218	919	150	150	30	...	30	30	93	92	62	62	...	...	981	981	66	...	84	...	84	84	471	...	471	471
Average per acre, in lbs. ...	444	1,074	373	429	417	...	289	289	344	371	309	321	...	...	2,656	2,656	1,142	...	1,097	...	1,104	1,104	471	...	471	471

STATEMENT X.

Mustard.

	Cachar.		Sylhet.		Total Surma Valley.		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total Brahmaputra Valley.		Total for the province.		Total for the province up to the end of	
	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Number of experiments	10	4	17	6	27	10	5	6	18	12	5	...	...	...	8	7	14	14	50*	39	152	49	2,213*	2,262
Total area experimented upon, in acres ...	2·67	1·33	4·06	2	6·73	3·33	1·67	2	5·92	4	1·67	...	...	...	2·40	2·33	4·50	4·66	16·16*	12·99	47·73	16·32	736·02*	752·34
Total crop gathered, in lbs.	1,557	659	2,815	592	4,372	1,251	1,236	1,090	2,346	1,612	860	...	...	...	1,338	1,378	6,210	4,781	11,990*	8,861	29,236	10,112	378,283*	388,395
Maximum per acre, in lbs.	1,200	615	1,689	503	1,689	1,689	1,110	814	648	721	810	...	...	...	1,605	802	2,190	1,666	2,190	1,666	2,190	1,666	2,190	2,190
Minimum per acre, in lbs.	444	432	21	154	21	154	168	222	198	185	192	...	...	...	123	394	48	479	123	185	21	154	21	21
Average per acre, in lbs.	583	495	693	296	5 49	375	740	545	396	403	515	...	...	...	557	591	1,380	1,026	742*	682*	612	619	514	516

* Revised figures.

STATEMENT XI.

Experiments made by Supervisor Kanungos and Mandals under the Mauza-book Rules.

Ahu.

—	Broadcast.							Transplanted.						
	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments	...	...	6	27	...	...	...	...	...	...	...	...	...	...
Total area cut, in acres	...	...	2·00	9·00	...	...	...	...	...	...	...	...	...	...
Total crop reaped, in lbs.	...	...	2,458	10,559	...	...	...	...	...	...	...	...	...	...
Maximum per acre, in lbs.	...	...	1,555	2,036	...	...	...	...	...	...	...	...	...	...
Minimum " "	...	...	438	629	...	...	...	...	...	...	...	...	...	...
Average " "	...	...	1,229	1,173	...	...	...	...	...	...	...	...	...	...

Sali.

—	*Bar dhan.*							*Lahi dhan.*						
	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Number of experiments	24	59	69	90	44	10	...	...	14	...	13	30	11	...
Total area cut, in acres	8·00	19·67	23·00	30·00	14·66	3·33	...	...	4·66	...	4·33	10·00	3·66	...
Total crop reaped, in lbs.	15,977	36,643	33,830	40,646	17,766	5,122	...	...	5,351	...	4,496	11,949	4,704	...
Maximum per acre, in lbs.	2,643	2,929	2,375	2,703	2,252	2,234	...	...	1,728	...	1,678	2,203	1,789	...
Minimum " "	1,555	1,037	543	481	765	919	...	...	894	...	567	771	740	...
Average " "	1,996	1,862	1,471	1,355	1,211	1,536	...	...	1,148	...	1,038	1,194	1,285	...

—	*Matika lai.*							Mustard.						
	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.
	30	31	32	33	34	35	36	37	38	39	40	41	42	43
Number of experiments	...	1	4	30	16	1	...	...	3	3	24	14	...	...
Total area cut, in acres	...	0·33	1·33	9·76	5·33	0·33	...	...	1·00	1·00	8·00	4·66	...	...
Total crop gathered, in lbs.	...	41	356	2,214	2,362	57	...	...	266	678	4,451	2,312	...	...
Maximum per acre, in lbs.	...	124	308	383	1,061	172	...	...	296	925	1,388	752	...	...
Minimum " "	...	124	246	44	129	172	...	...	244	308	228	259	...	...
Average " "	...	124	267	329	443	172	...	...	266	678	556	496	...	...

—	Sugarcane.						
	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.
	44	45	46	47	48	49	50
Number of experiments	...	4	...	39	6	...	...
Total area cut, in acres	...	0·26	...	1·96	0·36	...	...
Total crop gathered, in lbs.	...	446	...	4,237	678	...	...
Maximum per acre, in lbs.	...	...	...	...	...	...	...
Minimum " "	...	...	...	...	...	...	...
Average " "	...	1,715	...	2,161	1,883	...	...

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ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

FOR

1899-1900.

BY

D. H. LEES, Esq., I.C.S.,
OFFICIATING DIRECTOR, DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM.

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FROM

D. H. LEES, ESQ., I.C.S.,

Offg. Director, Department of Land Records and Agriculture, Assam,

TO

THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Shillong, the 3rd August 1900.

SIR,

I HAVE the honour to submit the Annual Note on Crop Experiments carried out in Assam during the year 1899-1900.

I have the honour to be,

SIR,

Your most obedient Servant,

D. H. LEES,

Offg. Director, Department of Land Records and Agriculture, Assam.

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ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

FOR

1899-1900.

INTRODUCTORY.

As in the preceding year, the experiments made by supervisor kanungos and mandals under the mauza-book rules have been dealt with separately, and their results have been kept distinct from those of experiments made by officers of higher rank both under the mauza-book rules and the ordinary crop-cutting rules, which still continue to be in force in those parts of the province where the mauza-book has not been introduced. The Note has accordingly been divided into two sections, the first dealing with experiments made by superior officers, *e.g.*, District and Subdivisional Officers, Sub-Deputy Collectors, Tahsildars, and Mauzadars, and the second dealing exclusively with experiments made by the supervisor kanungos and mandals.

SECTION I.

Nature of experiments.

2. During the year experiments were made as usual to ascertain the outturn of—

A.—Rice of various kinds.
B.—Sugarcane.
C.—Miscellaneous crops.
D.—Mustard.

In estimating the outturn of crops, the maund has been taken at $82\frac{2}{7}$ lbs., and the *bigha* at one-third of an acre.

Number of experiments.

3. The following statement shows, for each crop, the number of experiments carried out in each district, compared with the figures of the preceding year:

Number of experiments made during 1899-1900 *as compared with* 1898-99.

Crop.	Cachar.		Sylhet.		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Khasi and Jaintia Hills.		Garo Hills.		Total for the province.	
	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Sali ...	46	32	11	23	8	13	11	33	41	24	27	36	37	44	46	36	70	100	4	4	301	345
Ahu ...	8	12	3	2	5	5	5	20	...	20	28	16	...	...	30	14	28	42	16	16	123	147
Bao ...	5	4	15	22	...	...	5	10	...	1	5	...	...	...	...	1	...	...	...	...	30	38
Sailbura ...	...	...	4	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	12
Cane ...	7	1	5	17	3	...	4	3	1	3	5	4	3	4	22	10	...	...	...	...	50	42
Linseed ...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2
Radish ...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Mung ...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Til ...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	3
Cotton ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	9	12	9
Matikalai ...	3	...	...	...	2	2	...	4	1	5	...	8	3	1	34	21	...	...	...	...	43	41
Mustard and rape-seed.	4	2	6	12	6	1	12	6	...	2	...	9	7	4	14	9	...	...	...	...	49	45
Potato ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	...	...	...	12
Jute ...	...	...	...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
Kheshari (pulses)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	73	51	46	99	24	21	37	80	43	55	65	73	50	53	146	91	98	154	32	29	614	706

There was an increase in the number of experiments carried out during the year in all districts, except Cachar, Goalpara, Lakhimpur, and the Garo Hills, the increase being largest in the Khasi and Jaintia Hills (154 against 98). The number of experiments made is, on the whole, satisfactory, but the manner in which crop experiments are made generally does not yet appear to show any marked improvement. The necessity of selecting crops representing the average outturn for the season is often lost sight of, and a tendency is observed among experimenting officers to defer experiments till the close of the harvesting season. The attention of District Officers has been frequently drawn to these defects, and it is to be hoped that better and more trustworthy results will be obtained in future.

Results of experiments.

4. The statements, I to X, annexed compare the results of experiments made with different crops in the two years ending 1898-99 and 1899-1900; they also exhibit the aggregate results of all experiments made with each crop up to the close of the latter year.

A.—RICE (STATEMENTS I To VII).

Rice experiments.

5. The figures of outturn shown under this head represent the yield of unhusked rice.

I.—BRAHMAPUTRA VALLEY (STATEMENTS I, II, AND III).

Brahmaputra Valley rice experiments.

In *sali* (late transplanted rice), the most important crop grown in the Brahmaputra Valley, the largest number of experiments (4,625) have been made. According to the results of these experiments the average yield per acre is about 19½ maunds. The results of experiments in the two varieties of *sali* (*bar dhan* and *lahi dhan*) have been separately recorded for the past twelve years, and the results of last year's experiments continue to be in accord with those of experiments in previous years, as well as with what is generally known regarding the comparative productiveness of the two varieties, that *bar dhan* is much more prolific than the finer variety, *lahi dhan*. The average outturns obtained from these experiments were for the former 21⅜ maunds, and for the latter 15⅝ maunds, per acre. The average outturn of *ahu* (early rice) obtained from the experiments made up to date is about 16¼ maunds per acre, and that of *bao* (low-land broadcast) is nearly 15 maunds per acre. The average for rice of all kinds grown in the valley is 18 maunds per acre. These figures are substantially the same as those returned in the preceding reports.

II.—SYLHET (STATEMENT IV).

The net results of the rice experiments made in Sylhet up to the close of the year under report are briefly as follow:

Crop.	Number of experiments made.	Average outturn per acre. Mds.
Sail (late transplanted rice)	554	about 17½
Sailbura (transplanted summer rice)	282	„ 20
Aus and *murali* (early rice)	154	„ 15
Āman and *kataria* (species of late rice)	462	„ 16¾
All kinds of rice	1,452	„ 17½

The *sail* of Sylhet corresponds to the *sali* of the Brahmaputra Valley, *aus* and *murali* to *ahu*, and *aman* and *kataria* to *bao*. The *sailbura* of Sylhet has no equivalent in the Assam Valley, and is the same as the *boro* rice of Bengal. It is more prolific than any other variety grown in Sylhet.

III.—CACHAR (STATEMENT V).

Cachar rice experiments.

The number of experiments made in this district has been comparatively few. They give an average outturn for *sail* of about 17¼ maunds per acre, for *dumai* and *murali* (early rice) of 14½ maunds, for *asra* (late broadcast rice) of about 16½ maunds, and for all rice grown in the district of 16½ maunds. These three groups of Cachar rice correspond to *sali*, *ahu*, and *bao*, respectively, of the Brahmaputra Valley.

IV.—HILL RICE (STATEMENTS VI AND VII).

Hill rice experiments.

The average outturn of rice in the Khasi and Jaintia Hills is only 10¼ maunds per acre. For the Garo Hills, inclusive of the plains portion, the average is 13½ maunds to the acre.

B.—SUGARCANE (STATEMENT VIII).

6. The experiments made in this crop have been up to date 1,737 in number. The following are the results up to the end of 1899-1900:

Sugarcane experiments.

(1) The average weight of *gur* (molasses) per acre is 1,652 lbs., or more than 20 maunds.

(2) Cane yields 47·41 per cent. of its weight of juice and 8·39 per cent. of its weight of *gur* (molasses).

(3) The juice yields 17·69 per cent. of its weight of *gur* (molasses).

C.—MISCELLANEOUS CROPS (STATEMENT IX).

7. Twelve experiments were made during the year in potatoes in the Khasi and Jaintia Hills. These were the first experiments in potatoes made in this district. In Sylhet, 8 experiments were made in jute during the year, but none were made in the Goalpara district.

Miscellaneous crops.

D.—MUSTARD AND RAPE-SEED (STATEMENT X).

8. Since experiments with mustard were resumed in 1892-93, 537 experiments in the Brahmaputra Valley have been made by officers of superior rank, the total area cut being 166·61 acres, the total crops gathered 103,763lbs., and the average outturn per acre 623lbs., or 7½ maunds.

Mustard experiments.

In the Surma Valley, 143 experiments have been made, the total area cut being 39·58 acres, the total outturn 17,315lbs., and the average yield per acre 437 lbs., or a little over 5¼ maunds.

GENERAL REMARKS.

9. The number of experiments rejected during the year was comparatively few, 50, against 129 in the preceding year. The reasons for the rejection of these experiments are—

Rejected experiments.

Number of experiments rejected owing to area cut being above or below ⅕ *bigha* in case of sugarcane and 1 *bigha* in case of other crops.	34
Number rejected owing to crops cut not appearing to be of an average character.	9
Number of experiments rejected as untrustworthy	7
Total	50

Owing to the peculiar conditions of the Khasi and Jaintia Hills, the limitation of the area cut to one *bigha* in case of potatoes was not insisted upon. Some experiments made in Sylhet in which the area cut was shown in local measures, which are known to vary in different parts of the district, had to be rejected.

10. The names of the superior officers who conducted experiments during the year are given in the statement below:

Experimenting officers.

Name.	Rice.	Cane.	Mustard.	Miscellaneous.	Total.
1	2	3	4	5	6
Babu Krishna Kumar De, Sub-Deputy Collector, Silchar	4	...	...	...	4
Mahammad Sadir, ditto, Hailakandi	1	...	...	...	1
Babu Pradyumna Charan Das, Tahsildar, Silchar	2	...	...	...	2
,, Haris Chandra Sen, ditto, Hailakandi	3	...	...	...	3
Mr. Abdul Majid, B.A., L.L.B., Barrister-at-Law, Subdivisional Officer, Habiganj.	1	1	...	...	2
Babu Sarvananda Das, Extra Assistant Commissioner, Habiganj ...	1	1	...	...	2
Maulvi Muhammad Abdulla, B.A., Sub-Deputy Collector, Maulvi Bazar ...	16	12	8	...	36
Babu Sarat Chandra Mazumdar, Extra Assistant Commissioner, Karimganj	2	...	...	...	2
,, Ram Tarak Rai Barman, Special Sub-Registrar, Karimganj ...	3	...	...	...	3

Name.	Rice.	Cane.	Mustard.	Miscellaneous.	Total.
1	2	3	4	5	6
Babu Chandra Kanta Sen, Extra Assistant Commissioner, Sylhet ...	2	...	...	...	2
„ Janaki Nath Das, B.A., Sub-Deputy Collector, Dhubri ...	3	...	...	...	3
„ Bhola Nath Das, ditto, Boko tahsil, Kamrup ...	1	...	...	...	1
„ Hem Chandra Gossain, ditto, Gauhati, Kamrup ...	2	...	...	...	2
„ Debendra Kumar Mukherji, ditto, ditto ...	9	...	1	...	10
„ Bharat Chandra Das, ditto, ditto ...	4	...	...	...	4
„ Kali Ram Chaudhury, Tahsildar, Chhaygaon, Kamrup	2	...	...	...	2
„ Ramakanta Barua, ditto, Baijali, ditto	3	...	...	...	3
„ Bangsidhar Barua, ditto, Nalbari, ditto	4	...	...	...	4
„ Uday Chandra Barua, ditto, Rangiya, ditto	1	1	...	...	2
„ Ganga Ram Das, ditto, Baroma, ditto	3	1	...	1	5
„ Banga Chandra Chaudhury, Tahsildar, Patidarrang, Kamrup ...	7	...	...	1	8
„ Syamlal Chaudhury, ditto, Palasbari, ditto ...	5	...	...	...	5
„ Joy Ram Bhuiyan, ditto, Tambulpur, ditto ...	5	...	...	...	5
Mr. F. W. Strong, I.C.S., Subdivisional Officer, Mangaldai	1	...	...	...	1
Babu D. D. Borah, Sub-Deputy Collector, Patharughat tahsil, Darrang	7	1	2	1	11
„ Jajneswar Das Gupta, ditto, Mangaldai, Darrang ...	6	...	...	...	6
„ Rama Kanta Barua, B.A., ditto, ditto tahsil, Darrang ...	4	...	...	...	4
„ Rabi Chandra Sarma, Tahsildar, Tezpur tahsil	3	1	...	1	5
„ Ganga Nath Sarma, ditto, Chutia ditto	2	...	...	1	3
„ Ghana Kanta Chaliha, ditto, Kalaigaon ditto	5	...	...	...	5
„ Santi Ram Hazarika, ditto, Nowgong ditto	3	1	...	...	4
„ Gunahas Goswami, ditto, Roha	1	...	...	...	1
Munshi Faizuddin Ahmad, Sub-Deputy Collector, Sibsagar tahsil ...	2	...	...	...	2
Babu Sarat Chandra Lahiri, ditto, Golaghat ..	2	...	...	...	2
„ Laksheswar Sarma, ditto, Jorhat ...	2	...	1	...	3
„ Radha Kanta Handiqui, ditto, Namtidal tahsil ...	2	...	...	...	2
„ Benudhar Rajkhowa, ditto, Sibsagar ...	6	...	...	...	6
„ Guru Prasad Kakati, Tahsildar, Athgaon	5	...	...	...	5
„ Bistu Ram Barua, ditto, Jorhat	1	...	...	...	1
„ Dandadhar Barua, ditto, Golaghat	1	...	...	...	1
Munshi Azizar Rahman, Extra Assistant Commissioner, Dibrugarh ...	3	...	...	...	3
Mr. Bhupal Chandra Basu, B.A., M.R.A.C., M.R.A.S., (Eng.), Assistant to the Director of Land Records.	5	...	...	...	5

Mr. Strong, Subdivisional Officer, Mangaldai, and Mr. Abdul Majid, Subdivisional Officer, Habiganj, were the only officers of the Commission who carried out any crop experiments during the year. Among Sub-Deputy Collectors in districts where the mauza-book has been introduced and where crop experiments are made on a systematic basis, Munshi Didaruddin Ahmed, Sub-Deputy Collector, Patharughat tahsil, made the largest number of experiments. None of the Sub-Deputy Collectors in Lakhimpur (Munshi Abrar Hussain and Babus Ram Kumar Aditya and Gopal Chandra Puri Bhuiyan) appears to have made a single cutting. The number of cuttings carried out by Babus Bhola Nath Das, Hem Chandra Gossain, Sarat Chandra Lahiri, and Radha Kanta Handiqui, and Munshi Faizuddin Ahmad, was also insufficient.

SECTION II.

Experiments by supervisor kanungos and mandals.

11. A very large number of experiments was carried out in the districts of Kamrup, Darrang, Sibsagar, and Lakhimpur (where the mauza-book has been introduced) by supervisor kanungos and mandals. A number of experiments in *sali* and *ahu* was made by the same agency in the temporarily-settled parts of Goalpara, where the mauza-book has not been introduced.

The results of these experiments have been shown separately for each subdivision in Statement XI. The following statement compares for different crops the results of these experiments with those of experiments carried out by superior officers :

Crop.	Results of experiments by superior officers.		Results obtained by supervisor kanungos and mandals.	
	1899-1900.	Of all experiments up to the end of 1899-1900.	1899-1900.	Of all experiments up to the end of 1899-1900.
1	2	3	4	5
	lbs.	lbs.	lbs.	lbs.
Ahu	1,577	1,342	1,393	1,342
Bar dhan	1,728	1,758	1,451	1,479
Lahi dhan	1,539	1,288	1,289	1,250
Bao dhan	1,162	1,228	1,240	1,240
Mustard and rape-seed	490	516	355	396
Matikalai	509	489	264	285
Sugarcane	2,180	1,652	1,769	1,834

The manner in which the crop cuttings were made by the supervisor kanungos and mandals was not altogether free from fault. They partook of the same defects as I have noticed in paragraph 3 in regard to crop-cuttings made by superior officers. Out of a total of 1,227 experiments made by the supervisor kanungos and mandals, 17 were rejected as untrustworthy, 9 as having been made late in the season, and 3 for other causes.

D. H. LEES,

Offg. Director, Department of Land Records and Agriculture, Assam.

Shillong,

The 8th August 1900.

APPENDIX A.

STATEMENT I.

Sali.

		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Bar dhan.	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	1898-99 ...	8	...	2	9	30	11	16	11	28	9	36	10	120	50
	1899-1900 ...	13	...	14	19	21	3	31	5	37	7	29	7	145	41
Total area cut, in acres ...	1898-99 ...	2·66	...	0·66	3·00	10·00	3·66	5·32	3·66	9·33	3·01	12·00	3·33	39·97	16·66
	1899-1900 ...	4·33	...	4·67	6·33	7·00	1·00	10·33	1·67	12·33	2·33	9·67	2·33	48·33	13·66
Total crop reaped, in lbs. ...	1898-99 ...	5,005	...	1,085	4,165	20,510	6,136	10,152	6,253	14,287	2,840	20,373	4,065	71,412	23,459
	1899-1900 ...	8,824	...	8,715	9,538	12,308	1,450	19,233	3,713	17,042	2,556	17,417	3,766	83,539	21,023
Maximum per acre, in lbs. ...	1898-99 ...	2,424	...	1,749	2,238	2,967	2,097	2,868	2,962	3,486	1,203	2,715	1,604	3,486	2,962
	1899-1900 ...	3,023	...	2,817	2,454	2,622	2,271	3,085	2,777	2,231	2,155	2,561	2,073	3,085	2,777
Minimum per acre, in lbs. ...	1898-99 ...	1,110	...	1,506	759	678	1,686	630	616	845	777	864	864	630	616
	1899-1900 ...	1,431	...	1,332	1,036	1,110	936	839	1,944	555	522	1,049	1,110	555	522
Average per acre, in lbs. ...	1898-99 ...	1,881	...	1,644	1,388	2,051	1,676	1,907	1,708	1,531	943	1,697	1,220	1,786	1,408
	1899-1900 ...	2,038	...	1,806	1,507	1,758	1,450	1,862	2,223	1,382	1,097	1,801	1,616	1,728	1,539

Total number of experiments up to the close of the year 1899-1900 with *sali dhan* 4,625
Total area cut, in acres ... ... 1497·70
Total crop reaped, in lbs. 2,370,441
Average outturn per acre, in lbs. 1,582

For twelve years—1888-89 *to* 1899-1900.

	Bar dhan.	*Lahi dhan.*
1	2	3
Total number of experiments made	1,916	596
Total area cut, in acres	602·08	187·08
Total crop reaped, in lbs.	1,058,890	240,918
Average outturn per acre, in lbs.	1,758	1,288

STATEMENT II.

Ahu.

—		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
1		2	3		5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	1898-99 ...	5	...	5	...	...	...	28	...	...	...	30	...	68	...
	1899-1900 ...	5	...	20	...	5	15	16	...	...	...	14	...	60	15
Total area cut, in acres ...	1898-99 ...	1·66	...	1·66	...	...	...	9·33	...	...	...	10·00	...	22·65	...
	1899-1900 ...	1·67	...	6·67	...	1·67	5	5·33	...	...	...	4·67	...	20·01	5
Total crop reaped, in lbs. ...	1898-99 ...	2,662	...	1,919	...	...	...	14,879	...	...	...	13,630	...	33,090	...
	1899-1900 ...	2,543	...	8,996	...	2,003	8,217	8,800	...	...	...	8,878	...	31,220	8,217
Maximum per acre, in lbs.	1898-99 ...	1,759	...	1,632	...	...	...	2,374	...	...	...	2,666	...	2,666	...
	1899-1900 ...	1,996	...	2,252	...	1,728	2,429	2,777	...	...	...	2,536	...	2,777	2,429
Minimum per acre, in lbs.	1898-99 ...	1,283	...	381	...	...	...	752	...	...	...	512	...	381	...
	1899-1900 ...	1,166	...	666	...	897	1,110	802	...	...	...	617	...	617	1,110
Average per acre, in lbs. ...	1898-99 ...	1,603	...	1,156	...	...	...	1,594	...	...	...	1,363	...	1,461	...
	1899-1900 ...	1,522	...	1,348	...	1,199	1,643	1,651	...	...	...	1,901	...	1,560	1,643

Total number of experiments made up to the close of the year 1899-1900	2,247
Total area cut, in acres	753·87
Total crop reaped, in lbs.	1,011,670
Average outturn per acre, in lbs.	1,342

STATEMENT III.

Bao.

—		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	1898-99 ...	...	...	5	...	...	...	5	...	...	...	...	...	10	...
	1899-1900 ...	...	...	10	...	1	...	...	...	...	...	1	...	12	...
Total area cut, in acres ...	1898-99 ...	...	...	1·66	...	...	...	1·66	...	...	...	...	...	3·32	...
	1899-1900 ...	...	...	3·33	...	0·33	...	...	...	...	...	0·33	...	3·99	...
Total crop reaped, in lbs. ...	1898-99 ...	...	...	1,464	...	...	...	2,057	...	...	...	...	...	3,521	...
	1899-1900 ...	...	...	3,648	...	588	...	...	...	...	...	400	...	4,636	...
Maximum per acre, in lbs. ...	1898-99 ...	...	...	1,665	...	...	...	3,054	...	...	...	...	...	3,054	...
	1899-1900 ...	...	...	1,635	...	1,782	...	...	...	...	...	1,212	...	1,782	...
Minimum per acre, in lbs. ...	1898-99 ...	...	...	444	...	...	...	306	...	...	...	...	...	306	...
	1899-1900 ...	...	...	530	...	1,782	...	...	...	...	...	1,212	...	1,212	..
Average per acre, in lbs. ...	1898-99 ...	...	...	882	...	...	...	1,239	...	...	...	...	...	1,060	...
	1899-1900 ...	...	...	1,095	...	1,782	...	...	...	...	...	1,212	...	1,162	...

Total number of experiments made up to the close of the year 1899-1900 with *bao dhan*	55
Total area cut, in acres	182·25
Total crop reaped, in lbs.	223,794
Average outturn per acre, in lbs.	1,228

STATEMENT IV.

Sylhet Rice.

	Low-land *aus*.			High-land *aus*.						*Murali*.			*Sail*.			*Sailbura*.			High land *aman*.						*Kataria*.			Low-land *aman*.		
				Transplanted.			Broadcast.												Transplanted.			Broadcast.								
	1898-99.	1899-1900.	Total of twelve years ending 1899-1900.	1898-99.	1899-1900.	Total of twelve years ending 1899-1900.	1898-99.	1899-1900.	Total of twelve years ending 1899-1900.	1898-99.	1899-1900.	Total of twelve years ending 1899-1900.	1898-99.	1899-1900.	Total of seventeen years ending 1899-1900.	1898-99.	1899-1900.	Total of seventeen years ending 1899-1900.	1898-99.	1899-1900.	Total of twelve years ending 1899-1900.	1898-99.	1899-1900.	Total of twelve years ending 1899-1900.	1898-99.	1899-1900.	Total of twelve years ending 1899-1900.	1898-99.	1899-1900.	Total of twelve years ending 1899-1900.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Number of experiments	...	...	31	...	1	46	3	...	66	...	1	11	11	23	554	4	12	282	...	...	43	...	2	121	1	...	34	14	20	264
Total area cut, in acres	...	...	8·96	...	0·33	11·79	1·00	...	16·31	...	0·30	2·86	3·66	7·58	152·26	1·33	3·99	81·65	...	...	1,077	...	0·67	34·05	0·33	...	9·25	4·66	6·67	78·26
Total crop reaped, in lbs.	...	...	11,229	...	588	16,825	1,239	...	17,341	...	454	3,279	55	12,218	218,683	2,108	8,094	133,260	...	...	14,801	...	1,413	52,908	475	...	13,257	6,341	7,852	101,267
Maximum per acre, in lbs.	...	...	3,218	...	1,782	2,432	1,542	...	3,786	...	1,513	2,152	2,022	2,567	4,986	1,343	2,715	4,363	...	...	2,468	...	2,178	7,808	1,439	...	2,319	1,950	2,289	3,333
Minimum per acre, in lbs.	...	...	360	...	1,782	480	724	...	204	...	1,513	420	370	774	159	765	1,259	240	...	...	282	...	2,061	198	1,439	...	291	397	298	135
Average per acre, in lbs.	...	...	1,253	...	1,782	1,427	1,239	...	2,063	...	1,513	1,146	1,436	1,612	1,436	1,585	2,029	1,632	...	...	1,374	...	2,109	1,554	1,439	...	1,433	1,361	1,195	1,294

STATEMENT V.

Cachar Rice.

—	*Dumai.*			*Murali.*					*Asra.*			*Sail.*		
				1898-99.		1899-1900.								
	1898-99.	1899-1900.	Total of twelve years ending 1899-1900.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Total of twelve years ending 1899-1900.	1898-99.	1899-1900.	Total of twelve years ending 1899-1900.	1898-99.	1899-1900.	Total of twelve years ending 1899-1900.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	1	...	28	6	1	5	7	110	5	4	50	46	32	453
Total area cut, in acres ...	0·33	...	8·33	2·00	0·33	1·67	2·33	31·08	1·66	1·33	15·66	15·33	10·67	141·46
Total crop reaped, in lbs. ...	482	...	8,267	2,261	920	2,035	2,959	38,323	2,083	2,014	21,123	20,436	18,710	199,223
Maximum per acre, in lbs. ...	1,460	...	1,560	1,353	2,760	1,392	1,518	2,877	1,542	1,974	2,511	2,565	2,190	3,200
Minimum per acre, in lbs. ...	1,460	...	330	903	2,760	1,056	1,071	162	738	1,110	606	576	1,017	38
Average per acre, in lbs. ...	1,460	...	992	1,130	2,788	1,218	1,270	1,239	1,255	1,514	1,349	1,333	1,753	1,408

STATEMENT VI.

Khasi and Jaintia Hills Rice.

—	Up-land rice.			Low-land rice.		
	1898-99.	1899-1900.	Total (18 years ending 1899-1900).	1898-99.	1899-1900.	Total (18 years ending 1899-1900).
1	2	3	4	5	6	7
Number of experiments ...	28	42	773	70	100	1,077
Total area cut, in acres ...	9·33	14	216·30	23·33	33·33	307·67
Total crop reaped, in lbs. ...	5,062	6,774	162,914	18,004	19,734	278,379
Maximum per acre, in lbs. ...	1,505	1,017	2,264	2,127	1,110	3,400
Minimum per acre, in lbs. ...	278	185	40	61	185	61
Average per acre, in lbs. ...	542	484	753	771	592	904

STATEMENT VII.

Garo Hills Rice.

—	*Asu.*			*Sail.*		
	1898-99.	1899-1900.	Total (18 years ending 1899-1900).	1898-99.	1899-1900.	Total (18 years ending 1899-1900).
1	2	3	4	5	6	7
Number of experiments ...	16	16	169	4	4	45
Total area cut, in acres ...	5·33	5·33	54·41	1·33	1·33	14·21
Total crop reaped, in lbs. ...	5,627	5,696	53,184	1,753	2,501	22,986
Maximum per acre, in lbs. ...	2,105	1,257	2,115	1,864	2,172	2,961
Minimum per acre, in lbs. ...	271	258	216	444	1,629	444
Average per acre, in lbs. ...	1,056	1,069	977	1,318	1,880	1,617

STATEMENT VIII.

Sugarcane.

District.	Number of experiments.		Total area, in acres.		Total weight of cane, in lbs.		Weight of juice, in lbs.		Weight of *gur* (molasses).		Weight of *gur* (molasses) per acre, in lbs.		Pounds of juice per 100 lbs. of cane.		Pounds of *gur* (molasses) per 100 lbs. of cane.		Weight of *gur* (molasses) per 100 lbs. of juice.	
	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Cachar	7	1	0·78	0·07	25,016	2,592	15,599	1,687	3,015	226	3,865	3,228	62·36	65·07	15·45	8·72	24·78	13·39
Sylhet	5	17	0·41	1·21	9,161	36,466	5,084	16,723	1,015	2,827	2,475	2,358	55·49	45·86	11·07	7·75	19·96	16·90
Total Surma Valley	12	18	1·19	1·28	34,177	39,058	20,683	18,410	4,030	3,053	3,386	2,385	60·51	47·13	11·78	7·81	19·48	16·58
Goalpara	3	...	0·26	...	4,564	...	1,843	...	403	...	1,550	...	40·38	...	8·83	...	21·86	...
Kamrup	4	3	0·26	0·20	3,881	5,807	1,239	2,688	234	411	900	2,055	31·93	46·29	6·05	7·08	18·88	15·29
Darrang	1	3	0·06	0·20	1,347	4,054	685	2,092	103	369	1,716	1,845	50·85	51·60	7·64	9·10	15·03	17·64
Nowgong	5	4	0·40	0·27	10,069	2,987	4,626	1,758	724	411	1,810	1,522	45·94	58·86	7·20	13·76	15·65	23·38
Sibsagar	3	4	0·20	0·27	4,657	6,296	2,791	5,075	416	584	2,080	2,163	59·92	80·60	8·93	9·27	14·94	11·50
Lakhimpur	22	10	1·46	0·67	35,416	9,277	19,426	4,904	4,171	1,472	2,857	2,197	54·85	52·86	11·77	15·86	21·47	30·02
Total Brahmaputra Valley ...	38	24	2·64	1·61	59,934	28,421	30,610	16,517	6,051	3,247	2,292	2,017	51·07	58·11	10·00	11·42	19·76	19·66
Total for the Province	50	42	3·83	2·89	94,111	67,479	51,293	34,927	10,081	6,300	2,632	2,180	54·50	51·76	10·71	9·34	19·65	18·04
Total for 1899-1900	42		2·89		67,479		34,927		6,300		2,180		51·76		9·34		18·04	
„ „ 1898-99	50		3·83		94,111		51,293		10,081		2,632		54·50		10·71		19·65	
„ „ 1897-98	54		4·11		84,289		43,142		8,281		2,015		51·17		9·82		19·19	
„ „ 1896-97	70		4·57		130,420		50,274		11,080		2,424		38·54		8·49		22·04	
„ „ 1895-96	101		8·80		139,707		65,685		11,981		1,361		47·01		8·57		18·24	
„ „ 1894-95	115		7·35		189,662		90,611		16,560		2,253		47·77		8·73		18·27	
„ „ 1893-94	116		10·75		157,407		74,282		11,525		1,071		47·19		7·32		15·51	
„ „ 1892-93	92		6·32		120,996		55,124		10,712		1,695		45·55		8·85		19·43	
„ „ 1891-92	95		10·99		140,760		72,064		13,464		1,225		51·19		9·56		18·68	
„ „ 1890-91	121		9·32		164,733		81,602		14,600		1,566		49·53		8·86		17·89	
„ „ 1889-90	131		14·18		228,189		106,564		16,625		1,172		46·69		7·28		15·60	
„ „ 1888-89	150		15·47		245,680		120,476		21,259		1,374		49·03		8·65		17·64	
„ „ 1887-88	148		21·26		346,412		171,663		30,499		1,434		49·55		8·80		17·77	
„ „ 1886-87	128		24·00		409,766		208,863		34,437		1,435		50·97		8·40		16·49	
„ „ 1885-86	93		16·05		370,606		155,649		26,159		1,629		42·00		7·06		16·81	
„ „ 1884-85	151		20·59		455,848		206,738		35,701		1,734		45·35		7·83		17·27	
„ „ 1883-84	80		...		210,329		97,159		18,970		...		46·19		9·02		19·52	
Total	1,737		180·48		3,556,394		1,686,116		2,98,234		1,652		47·41		8·39		17·69	

STATEMENT IX.

Miscellaneous Crops.

	Matikalai (*Phaseolus mungo*, var. *radiatus*).																		*Mung* (*Phaseolus mungo*).						Radish.	
	Cachar.		Sylhet.		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total up to the end of		Kamrup.		Sibsagar.		Total up to the end of		Sylhet.	
	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Number of experiments	3	...	...	...	2	2	...	4	1	5	...	8	3	1	34	21	2,022	2,063	...	1	...	...	147	148	...	1
Total area experimented upon	1·00	...	...	...	0·66	0·67	...	1·33	0·33	1·67	...	2·67	1·00	0·33	11·33	7·00	151·15	164·82	...	0·33	...	...	32·39	32·72	...	0·33
Total crop gathered, in lbs.	581	...	...	...	308	96	...	315	61	371	...	744	189	166	6,479	5,270	73,591	80,553	...	86	...	...	10,868	10,954	...	22
Maximum per acre, in lbs.	696	...	...	...	814	189	...	425	185	279	...	536	328	503	1,356	1,345	2,100	2,100	...	260	...	...	1,003	1,003	...	67
Minimum per acre, in lbs.	426	...	...	...	111	99	...	111	185	201	...	92	107	503	123	357	18	18	...	260	...	...	29	29	...	67
Average per acre, in lbs.	581	...	...	...	465	143	...	237	185	222	...	278	189	503	571	753	487	489	...	260	...	...	335	335	...	67

	Radish—*contd.*		Linseed.				*Til* Sesamum)				Cotton.				Potato.						Jute.						*Khesari* (pulses).			
	Total up to the end of		Sylhet.		Total up to the end of		Kamrup.		Total up to the end of		Garo Hills.		Total up to the end of		Khasi and Jaintia Hills.		Lakhimpur.		Total up to the end of		Sylhet.		Goalpara.		Total up to the end of		Kamrup.		Total up to the end of	
	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.
	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
Number of experiments	32	33	2	2	37	39	...	3	103	106	12	9	69	69	...	12	...	...	7	19	...	8	...	...	48	56	...	...	1	1
Total area experimented upon	15·45	15·78	0·66	0·67	8·30	9·07	...	1·00	28·72	29·72	4·00	3·00	20·73	23·73	...	3·12	...	...	1·79	4·91	...	2·65	...	...	13·06	15·71	...	...	0·07	0·07
Total crop gathered, in lbs.	5,617	5,639	709	293	3,561	3,854	...	111	83·21	8,432	1,484	1,561	6,665	8,226	...	12,242	...	...	4,754	16,996	...	2,741	...	...	14,416	17,157	...	...	33	33
Maximum per acre, in lbs.	1,028	1,028	1,209	509	4,020	4,020	...	129	1,058	1,058	944	1,401	987	1,401	...	10,597	...	...	6,171	10,597	...	1,536	...	...	2,500	2,500	...	...	471	471
Minimum per acre, in lbs.	36	36	919	370	150	150	...	92	30	30	92	147	62	62	...	1,974	...	...	981	981	...	504	...	...	84	84	...	...	471	471
Average per acre, in lbs.	363	357	1,074	437	429	425	...	111	289	283	371	1,561	321	347	...	3,924	...	...	2,656	3,461	...	1,034	...	...	1,104	1,092	...	...	471	471

STATEMENT X.

Mustard and Rape-seed

—	Cachar.		Sylhet.		Total Surma Valley.		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total Brahmaputra Valley.		Total for the province.		Total for the province up to the end of	
	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Number of experiments	4	2	6	12	10	14	6	1	12	6	...	2	...	9	7	4	14	9	31	31	49	45	2,262	2,307
Total area experimented upon, in acres ...	1·33	0·67	2	4	3·33	4·67	2	0·33	4	2	...	0·67	...	3	2·33	1·33	4·66	3	12·99	10·31	16·32	15·00	752·34	767·34
Total crop gathered, in lbs.	659	263	592	1,345	1,251	1,608	1,090	117	1,612	902	...	379	...	1,256	1,378	565	4,781	2,529	8,861	5,748	10,112	7,356	388,395	395,751
Maximum per acre, in lbs.	615	399	503	432	1,689	432	814	354	721	740	...	617	...	802	802	794	1,666	1,345	1,665	1,345	1,666	1,345	2,150	2,150
Minimum per acre, in lbs.	432	390	154	240	154	240	222	354	185	234	...	521	...	154	394	308	479	308	185	154	154	154	21	21
Average per acre, in lbs.	495	372	296	336	375	344	545	354	403	451	...	565	...	414	591	425	1,026	843	682	556	619	490	516	516

STATEMENT XI.

Experiments by Supervisor Kanungos and Mandals.

Ahu.

	Broadcast.										Transplanted.									
	Dhubri.	Gauhati.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total (excluding Dhubri) up to the end of 1899-1900.	Dhubri.	Gauhati.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total (excluding Dhubri) up to the end of 1899-1900.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Number of experiments ...	2	41	7	6	...	...	...	...	7	94	...	...	...	41	...	...	...	...	...	41
Total area cut, in acres ...	0·67	13·67	2·33	2·00	...	...	...	...	2·33	31·33	...	...	...	13·67	...	...	...	...	...	13·67
Total crop reaped, in lbs.	850	17,292	2,884	2,250	...	...	...	...	3,081	38,524	...	...	...	21,880	...	...	...	...	...	21,880
Maximum per acre, "	1,332	2,214	1,660	1,357	...	...	...	...	1,680	2,214	...	...	...	2,456	...	...	...	...	...	2,456
Minimum " "	1,218	370	1,018	851	...	...	...	...	924	370	...	...	...	857	...	...	...	...	...	857
Average " "	1,268	1,265	1,238	1,125	...	...	...	...	1,322	1,230	...	...	...	1,601	...	...	...	...	...	1,601

Sali.

	Bar dhan.										Lahi dhan.									
	Dhubri.	Gauhati.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total (excluding Dhubri) up to the end of 1899-1900.	Dhubri.	Gauhati.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total (excluding Dhubri) up to the end of 1899-1900.
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Number of experiments ...	87	55	24	43	111	90	69	7	21	726	...	95	1	8	2	3	24	5	...	206
Total area cut, in acres ...	29	18·33	8·00	14·33	37·00	30·00	23·00	2·33	7	238·65	...	31·67	0·33	2·67	0·67	1·00	8·00	1·67	...	68·66
Total crop reaped, in lbs. ...	54,105	32,491	15,517	23,091	52,963	35,571	27,675	4,225	11,592	353,109	...	42,828	637	3,205	910	726	8,336	2,660	...	85,808
Maximum per acre, " ...	3,085	3,198	2,283	2,382	2,499	2,160	1,678	2,058	2,049	3,198	...	2,258	1,930	1,820	1,434	975	1,599	1,800	...	2,203
Minimum " " ...	1,049	1,036	1,467	722	543	401	704	1,546	1,123	401	...	610	1,930	771	1,296	586	793	1,339	...	56
Average " " ...	1,867	1,772	1,939	1,611	1,430	1,186	1,203	1,813	1,656	1,479	...	1,352	1,930	1,200	1,358	726	1,042	1,592	...	1,250

STATEMENT XI—*continued.*

	Matikalai.									Mustard.								
	Gauhati.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total up to the end of 1899-1900.	Gauhati.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total up to the end of 1899-1900.
	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
Number of experiments	90	18	16	5	16	8	2	5	212	93	3	1	4	23	7	...	7	182
Total area cut, in acres	30	6·00	5·33	1·67	5·33	2·67	0·67	1·67	70·42	31·00	1·00	0·33	1·33	7·67	2·33	...	2·33	60·65
Total crop reaped, in lbs.	7,385	1,229	1,441	366	1,614	1,040	234	743	20,082	9,733	305	170	681	3,358	1,147	...	922	24,023
Maximum per acre, „	1,079	371	370	370	486	777	363	585	1,079	677	382	515	540	691	647	...	555	1,388
Minimum „ „	61	61	178	117	92	148	339	339	44	54	220	515	462	308	351	...	228	54
Average „ „	246	205	270	219	303	389	349	445	285	314	305	515	512	437	492	...	395	396

	Sugarcane.									*Bao.* Broadcast.									*Bao.* Transplanted.								
	Gauhati.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total up to the end of 1899-1900.	Gauhati.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total up to the end of 1899-1900.	Gauhati.	Tezpur.	Mangaldai	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total up to the end of 1899-1900.
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
Number of experiments ...	75	14	3	16	27	18	2	1	205	77	4	...	...	...	...	...	1	82	2	...	...	...	...	...	...	...	2
Total area cut, in acres ...	5·00	0·93	0·20	1·07	1·10	1·20	0·13	0·06	12·27	25·67	1·33	...	...	...	...	...	0·33	27·33	0·67	...	...	...	...	...	...	...	0·67
Total crop reaped, in lbs ...	8,255	1,883	351	1,633	1,636	3,065	292	57	22,503	31,573	1,629	...	...	...	...	...	469	33,671	1,044	...	...	...	...	...	...	...	1,044
Maximum per acre „ ...	...	...	...	...	...	...	...	...	...	2,401	1,466	...	...	...	...	...	1,421	2,401	1,677	...	...	...	...	...	...	...	1,677
Minimum „ „ ...	...	...	...	...	...	...	...	...	...	370	567	...	...	...	...	...	1,421	370	1,355	...	...	...	...	...	...	...	1,355
Average „ „ ...	1,651	2,024	1,755	1,526	1,460	[illegible]	2,246	950	1,834	1,232	1,225	...	...	...	...	...	1,421	1,232	1,558	...	...	...	...	...	...	...	1,558

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ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

FOR

1900-1901.

BY

F. C. HENNIKER, Esq., I.C.S.,

DIRECTOR, DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM.

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FROM

F. C. HENNIKER, Esq., I.C.S.,
Director, Department of Land Records and Agriculture, Assam.

TO

THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Shillong, the 13th August 1901.

SIR,

I HAVE the honour to submit the Annual Note on Crop Experiments carried out in Assam during the year 1900-1901.

I have the honour to be,

SIR,

Your most obedient Servant,

F. C. HENNIKER,
Director, Department of Land Records and Agriculture, Assam.

ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

FOR

1900-1901.

INTRODUCTORY.

As in the preceding two years, experiments were made both under the Mauza-book Rules and under the ordinary crop-cutting rules, which still continue to be in force in those parts of the province where the mauza-book has not been introduced. This Note has been divided into two sections—Section I dealing with the experiments made by superior officers, *e.g.*, District and Subdivisional Officers, Sub-Deputy Collectors, Tahsildars and Mauzadars, etc., under either set of rules, and Section II dealing exclusively with the experiments made by the Supervisor Kanungos and Mandals under the Mauza-book Rules.

SECTION I.

EXPERIMENTS MADE BY SUPERIOR OFFICERS.

Nature of experiments.

2. During the year, experiments were made, as usual, to ascertain the outturn of—

(1) Rice of various kinds (Statements I to VII).
(2) Sugarcane (Statement VIII).
(3) Miscellaneous crops (Statement IX).
(4) Mustard (Statement X).

In estimating the outturn of crops the maund has been taken as usual at $82\frac{2}{7}$lbs., and the *bigha* at one-third of an acre. In all statements of outturn in this Note the figures represent outturn in pounds per acre.

Number of experiments.

3. The number of experiments carried out in the last two years was 706 in 1899-1900 and 584 in the year under report.

The number of experiments made during the year fell off in all districts, except Sylhet and Goalpara, the total decrease being 122. In Kamrup, there were only 35 against 80 in the previous year. The decrease is probably due to the additional work thrown by the census upon the district staff. Though the manner in which crop-cuttings were made was not altogether free from fault, some improvement was noticed during the year in this direction, and the number of experiments rejected was fewer than in the preceding year (*vide* paragraph 7 *infra*).

Results of experiments.

4. The Statements I to X, annexed, compare the results of experiments made with different crops in the two years ending 1899-1900 and 1900-1901; they also exhibit the aggregate results of all experiments made with each crop up to the close of the latter year.

Rice experiments.

5. The figures of outturn shown in Statements I to VII represent the yield of unhusked rice. Statements I, II, and III exhibit the results of experiments in *sali*, *ahu* and *bao* rice for the last two years, as well as the average results of experiments made since 1881-82 up to the close of the past year in the Brahmaputra Valley. The singularly unfavourable character of the past season has been strikingly brought out in Statements I and II, which show the poor yields of the *ahu* and *sali* crops last year, as compared with their average normal outturns and the outturns obtained in the preceding year. The yields were as follows :—

	Normal. lbs.	1899-1900. lbs.	1900-1901. lbs.
Sali bar	1,738	1,728	1,329
Sali lahi	1,276	1,539	735
Ahu Broadcast	1,340	1,560	1,313
Ahu Transplanted		1,643	1,226

The effect of the drought last year is also seen in the low outturn of the main winter rice crop (*sail*) in both districts of the Surma Valley. The yield of *sail* was as follows :—

	Normal.	1899-1900.	1900-1901.
	lbs.	lbs.	lbs.
Sylhet	1,435	1,612	1,413
Cachar	1,371	1,753	583

(2) SUGARCANE (STATEMENT VIII).

6. Thirty-four experiments in sugarcane were carried out during the year against 42 in the preceding year. The average outturn of *gur* obtained last year, as compared with the preceding year's outturn and the average for the preceding five years, was as follows :—

	Brahmaputra Valley.	Surma Valley.
	lbs.	lbs.
Quinquennial average	2,108	1,687
1899-1900	2,017	2,385
1900-1901	2,154	2,203

So that 1900-1901 was on the whole a good year for sugarcane, the outturn being well above the normal.

Rejected experiments.

7. The number of experiments rejected was comparatively few (36 against 50 in the preceding year). The reasons for the rejection were :—

Number of experiments rejected owing to area cut being above or below the standard area	4
Number rejected because crops cut were not of fair average character ...	10
Number of experiments rejected as untrustworthy	22
Total	36

Owing to the peculiar conditions of the Khasi and Jaintia Hills, the limitation of the area cut to one *bigha* in case of potatoes was not insisted upon. Some experiments made in Sylhet, in which the area cut was returned in local measures, which are known to vary in different parts of the district, had also to be rejected.

Experimenting officers.

8. The superior officers who carried out experiments comprised Mr. J. C. Arbuthnott, C.I.E., Deputy Commissioner of Sibsagar, Mr. B. C. Basu, Assistant to the Director, 4 Extra Assistant Commissioners, 17 Sub-Deputy Collectors, and 9 tahsildars, who are not Sub-Deputy Collectors.

Mr. J. C. Arbuthnott, Deputy Commissioner, Sibsagar, is the only officer of the Commission who carried out any crop experiment during the year. Among the Sub-Deputy Collectors in districts where crop experiments are made on a systematic basis under the Mauza-book Rules, Babu Jajneswar Das Gupta made the largest number of experiments. The number of experiments carried out by the majority of Sub-Deputy Collectors was not satisfactory. The following Sub-Deputy Collectors did not make a single cutting, although the duty of conducting experiments was expressly imposed upon them by the Mauza-book Rules :— Babu Radha Kanta Handiqui, Namtidal tahsil, Sibsagar, Babu Gopal Chandra Puri Bhuiyan, Dibrugarh, Maulvi Abrar Hussain, North Lakhimpur, and Babu Mahendra Chandra De, Tezpur.

SECTION II.

EXPERIMENTS MADE BY SUPERVISOR KANUNGOS AND MANDALS.

9. A very large number of experiments were carried out by Supervisor Kanungos and Mandals under the Mauza-book Rules in the districts of Kamrup, Darrang, Sibsagar, and Lakhimpur, and also a number of experiments in *sali* and *ahu* were made by the same agency in the temporarily-settled parts of Goalpara, where the mauza-book has not been introduced.

The results of these experiments have been shown separately for each subdivision in Statement XI. Comparing these experiments with those carried out by superior officers, the results show that the superior officers almost invariably obtain a higher outturn.

For instance, according to the experiments of superior officers, the outturn of *ahu* rice is 1,340 lbs. per acre. By the experiments of Supervisor Kanungos and Mandals, the outturn is 1,114 lbs. per acre. In *bar dhan* the figures are 1,738, against 1,384; in *matikalai* 494 against 286. I am unable to assign a reason for this, but I conjecture that the lower officers (Supervisor Kanungos and Mandals) are liable to be influenced, so as to show a small outturn, by the cultivators, who probably have a vague idea that these experiments are for the purpose of taxation. The manner in which the crop-cuttings were made by Supervisor Kanungos and Mandals was not free from faults. Out of a total of 1,583 experiments made by the Supervisor Kanungos and Mandals, 37 were rejected (10 owing to crop cut not appearing to be of an average character, and 27 owing to area cut being much less than the prescribed area).

F. C. HENNIKER,

Director, Department of Land Records and Agriculture, Assam.

Shillong,
The 13th August 1901.

APPENDICES.

Appendix A.

STATEMENT I.

Sali.

—		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Bar dhan.	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	1899-1900 ...	13	...	14	19	21	3	31	5	37	7	29	7	145	41
	1900-1901 ...	10	...	2	4	21	2	6	2	24	4	30	...	93	12
Total area cut, in acres ...	1899-1900 ...	4·33	...	4·67	6·33	7·00	1·00	10·33	1·67	12·33	2·33	9·67	2·33	48·33	13·66
	1900-1901 ...	3·33	...	0·67	1·33	7·00	0·67	2·00	0·67	8·00	1·33	10·00	...	31·00	4·00
Total crop reaped, in lbs.	1899-1900 ...	8,824	...	8,715	9,538	12,308	1,450	19,233	3,713	7,042	2,556	17,417	3,766	83,539	21,023
	1900-1901 ...	6,417	...	796	1,142	9,751	613	1,699	422	9,642	961	12,896	...	41,201	2,938
Maximum per acre, in lbs.	1899-1900 ...	3,023	...	2,817	2,454	2,622	2,271	3,085	2,777	2,231	2,155	2,561	2,073	3,085	2,777
	1900-1901 ...	2,166	...	1,531	1,066	2,221	1,111	1,080	771	1,998	926	1,882	...	2,221	1,111
Minimum " "	1899-1900 ...	1,431	...	1,332	1,036	1,110	936	839	1,944	555	522	1,049	1,110	555	522
	1900-1901 ...	1,302	...	858	668	771	728	494	494	617	555	494	...	494	494
Average " "	1899-1900 ...	2,038	...	1,866	1,507	1,507	1,450	1,862	2,223	1,382	1,097	1,801	1,616	1,728	1,539
	1900-1901 ...	1,927	...	1,188	859	1,393	915	850	631	1,205	723	1,290	...	1,329	735

Total number of experiments up to the close of the year 1900-1901 with *sali dhan* ...	4,730
Total area cut, in acres ...	1,532·70
Total crop reaped, in lbs. ...	2,414,580
Average outturn per acre, in lbs. ...	1,575

For thirteen years—1888-89 *to* 1900-1901.

—	*Bar dhan.*	*Lahi dhan.*
1	2	3
Total number of experiments ...	2,015	708
Total area cut, in acres ...	633·08	191·08
Total crop reaped, in lbs. ...	1,100,091	243,856
Average outturn per acre, in lbs. ...	1,738	1,276

STATEMENT II.

Ahu.

		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	1899-1900 ...	5	...	20	...	5	15	16	...	...	...	14	...	60	15
	1900-1901 ...	7	...	12	3	...	22	21	...	3	...	5	...	51	22
Total area cut, in acres ...	1899-1900 ...	1·67	...	6·67	...	1·67	5·00	5·33	...	...	...	4·67	...	20·01	5·00
	1900-1901 ...	2·33	...	4·00	1·00	...	7·33	7·00	...	1·00	...	1·67	...	17·00	7·33
Total crop reaped, in lbs. ...	1899-1900 ...	2,543	...	8,996	...	2,003	8,217	8,800	...	...	...	8,878	...	31,220	8,217
	1900-1901 ...	3,241	...	5,148	1,378	...	8,987	9,084	...	1,128	...	2,339	...	22,318	8,987
Maximum per acre, in lbs. ...	1899-1900 ...	1,996	...	2,252	...	1,728	2,429	2,777	...	...	...	2,536	...	2,777	2,429
	1900-1901 ...	2,080	...	1,759	1,524	...	1,919	1,882	...	1,302	...	1,851	...	2,080	1,919
Minimum " " ...	1899-1900 ...	1,166	...	666	...	897	1,110	802	...	...	...	617	...	617	1,110
	1900-1901 ...	1,018	...	802	1,277	...	576	494	...	892	...	863	...	494	576
Average " " ...	1899-1900 ...	1,522	...	1,348	...	1,199	1,643	1,651	...	...	...	1,901	...	1,560	1,643
	1900-1901 ...	1,391	...	1,287	1,378	...	1,226	1,298	...	1,128	...	1,401	...	1,313	1,226

Total number of experiments made up to the end of 1900-1901 2,320

Total area cut, in acres ... ... 778·20

Total crop reaped, in lbs. 1,042,975

Average outturn per acre, in lbs. 1,340

STATEMENT III.

Bao.

		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	1899-1900 ...	...	...	10	...	1	...	...	...	...	...	1	...	12	...
	1900-1901 ...	...	...	2	...	...	...	...	...	...	...	1	...	3	...
Total area cut, in acres ...	1899-1900 ...	...	...	3·33	...	0·33	...	...	...	...	...	0·33	...	3·99	...
	1900-1901 ...	...	...	0·67	...	...	...	...	...	...	...	0·33	...	1·00	...
Total crop reaped, in lbs. ...	1899-1900 ...	...	...	3,648	...	588	...	...	...	...	...	400	...	4,636	...
	1900-1901 ...	...	...	813	...	...	...	...	...	...	...	267	...	1,080	...
Maximum per acre, in lbs. ...	1899-1900 ...	...	...	1,635	...	1,782	...	...	...	...	...	1,212	...	1,782	...
	1900-1901 ...	...	...	1,543	...	...	...	...	...	...	...	809	...	1,543	...
Minimum " " ...	1899-1900 ...	...	...	530	...	1,782	...	...	...	...	...	1,212	...	1,212	...
	1900-1901 ...	...	...	895	...	...	...	...	...	...	...	809	...	802	...
Average " " ...	1899-1900 ...	...	...	1,095	...	1,782	...	...	...	...	...	1,212	...	1,162	...
	1900-1901 ...	...	...	1,213	...	...	...	...	...	...	...	809	...	1,080	...

Total number of experiments made up to the close of the year 1900-1901 with *bao dhan* ...	58
Total area cut, in acres	183·25
Total crop reaped, in lbs.	224,874
Average outturn per acre, in lbs.	1,227

STATEMENT IV.

Sylhet Rice.

	Low-land *aus*.			High-land *aus*.						*Murali*.			*Sail*.			*Sailbura*.			High-land *aman*.						*Kataria*.			Low-land *aman*.		
				Transplanted.			Broadcast.												Transplanted.			Broadcast.								
	1899-1900.	1900-1901.	Total of thirteen years ending 1900-1901.	1899-1900.	1900-1901.	Total of thirteen years ending 1900-1901.	1899-1900.	1900-1901.	Total of thirteen years ending 1900-1901.	1899-1900.	1900-1901.	Total of thirteen years ending 1900-1901.	1899-1900.	1900-1901.	Total of eighteen years ending 1900-1901.	1899-1900.	1900-1901.	Total of eighteen years ending 1900-1901.	1899-1900.	1900-1901.	Total of thirteen years ending 1900-1901.	1899-1900.	1900-1901.	Total of thirteen years ending 1900-1901.	1899-1900.	1900-1901.	Total of thirteen years ending 1900-1901.	1899-1900.	1900-1901.	Total of thirteen years ending 1900-1901.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Number of experiments	...	...	31	1	1	47	...	...	66	1	1	12	23	23	577	12	13	295	...	...	43	2	...	121	...	...	34	20	29	293
Total area cut, in acres	...	...	8·96	0·33	0·33	12·12	...	...	16·31	0·30	0·33	3·19	7·58	7·31	159·57	3·99	4·25	85·90	...	...	10·77	0·67	...	34·05	...	...	9·25	6·67	9·50	87·76
Total crop reaped, in lbs.	...	...	11,229	588	603	17,428	...	...	17,341	454	595	3,874	12,218	10,328	229,011	8,094	8,068	141,328	...	...	14,801	1,413	...	52,908	...	...	13,257	7,852	10,025	111,292
Maximum per acre, in lbs.	...	...	3,218	1,782	1,827	2,432	...	...	3,786	1,513	1,803	2,152	2,567	2,320	4,986	2,715	2,641	4,363	...	...	2,468	2,178	...	7,808	...	...	2,319	2,289	2,483	3,333
Minimum " "	...	...	360	1,782	1,827	480	...	...	204	1,513	1,803	420	774	401	159	1,259	1,259	240	...	...	282	2,061	...	198	...	...	291	298	370	135
Average " "	...	...	1,258	1,782	1,527	1,438	...	...	1,063	1,513	1,803	1,214	1,612	1,413	1,435	2,029	1,898	1,645	...	...	1,374	2,109	...	1,554	...	...	1,433	1,195	1,055	1,268

STATEMENT V.

Cachar Rice.

—	*Dumai.*			*Murali.*					*Asra.*			*Sali.*		
				1899-1900.		1900-1901.								
	1899-1900.	1900-1901.	Total of thirteen years ending 1900-1901.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Total of thirteen years ending 1900-1901.	1899-1900.	1900-1901.	Total of thirteen years ending 1900-1901.	1899-1900.	1900-1901.	Total of thirteen years ending 1900-1901.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	...	3	31	5	7	6	5	121	4	7	57	32	20	473
Total area cut, in acres ...	...	1·00	9·33	1·67	2·33	2·00	1·67	34·75	1·33	2·33	17·99	10·67	6·67	148·13
Total crop reaped, in lbs. ...	...	905	9,172	2,035	2,959	1,941	2,067	42,561	2,014	3,334	24,457	18,710	3,890	203,113
Maximum per acre, in lbs. ...	...	1,111	1,560	1,392	1,518	1,338	1,350	2,877	1,974	1,836	2,511	2,190	937	3,200
Minimum ,, ,, ...	...	555	330	1,056	1,071	576	1,074	162	1,110	624	606	1,017	174	38
Average ,, ,, ...	...	905	983	1,218	1,270	971	1,246	1,225	1,514	1,431	1,359	1,753	583	1,371

STATEMENT VI.

Khasi and Jaintia Hills Rice.

—	Up-land rice.			Low-land rice.		
	1899-1900.	1900-1901.	Total (19 years ending 1900-1901).	1899-1900.	1900-1901.	Total (19 years ending 1900-1901).
1	2	3	4	5	6	7
Number of experiments ...	42	27	800	100	104	1,181
Total area cut, in acres ...	14·00	9·00	225·30	33·33	34·67	342·34
Total crop reaped, in lbs. ...	6,774	4,402	167,316	19,734	22,059	300,438
Maximum per acre, in lbs. ...	1,017	814	2,264	1,110	1,512	3,400
Minimum ,, ,, ...	185	185	40	185	247	61
Average ,, ,, ...	484	489	743	592	636	878

STATEMENT VII.

Garo Hills Rice.

—	*Asu.*			*Sail.*		
	1899-1900.	1900-1901.	Total (19 years ending 1900-1901).	1899-1900.	1900-1901.	Total (19 years ending 1900-1901).
1	2	3	4	5	6	7
Number of experiments ...	16	6	175	4	2	47
Total area cut, in acres ...	5·33	2·00	56·41	1·33	0·67	14·88
Total crop reaped, in lbs. ...	5,696	2,184	55,368	2,501	1,249	24,235
Maximum per acre, in lbs. ...	1,257	1,561	2,115	2,172	2,172	2,961
Minimum ,, ,, ...	258	741	216	1,629	1,574	444
Average ,, ,, ...	1,069	1,092	981	1,880	1,864	1,628

STATEMENT VIII.

Sugarcane.

District.	Number of experiments.		Total area cut, in acres.		Total weight of cane, in lbs.		Weight of juice, in lbs.		Weight of *gur* (molasses).		Weight of *gur* (molasses) per acre, in lbs.		Pounds of juice per 100 lbs. of cane.		Pounds of *gur* (molasses) per 100 lbs. of cane.		Weights of *gur* (molasses) per 100 lbs. of juice.	
	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Cachar	1	...	0·07	...	2,592	...	1,687	...	226	...	3,228	...	65·07	...	8·72	...	13·39	...
Sylhet	17	11	1·21	1·02	36,466	21,244	16,723	8,681	2,827	2,247	2,358	2,203	45·86	40·86	7·75	10·58	16·90	25·88
Total for Surma Valley	18	11	1·28	1·02	39,058	21,244	18,410	8,681	3,053	2,247	2,385	2,203	47·13	40·86	7·81	10·58	16·58	25·88
Goalpara	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kamrup	3	3	0·20	0·20	5,807	3,667	2,688	1,215	411	222	2,055	1,110	46·29	33·13	7·08	6·05	15·29	18·27
Darrang	3	2	0·20	0·13	4,054	1,747	2,092	915	369	185	1,845	1,388	51·60	52·37	9·10	10·59	17·64	20·22
Nowgong	4	1	0·27	0·07	2,987	689	1,758	185	411	41	1,522	617	58·86	26·85	13·76	5·95	23·38	22·16
Sibsagar	4	8	0·27	0·53	6,296	16,457	5,075	9,869	584	1,572	2,163	2,948	80·60	59·97	9·27	9·55	11·50	15·93
Lakhimpur	10	9	0·67	0·60	9,277	17,103	4,904	7,558	1,472	1,448	2,197	2,413	52·86	44·19	15·86	8·47	30·02	19·16
Total for Brahmaputra Valley ...	24	23	1·61	1·53	28,421	39,663	16,517	19,742	3,247	3,468	2,017	2,154	53·11	49·77	11·42	8·74	19·66	17·56
Total for the Province	42	34	2·89	2·55	67,479	60,907	34,927	28,423	6,300	5,715	2,180	2,241	51·76	46·67	9·34	9·38	18·04	20·11
Total for 1900-1901	34		2·55		60,907		28,423		5,715		2,241		46·67		9·38		20·11	
„ „ 1899-1900	42		2·89		67,479		34,927		6,300		2,180		51·76		9·34		18·04	
„ „ 1898-99	50		3·83		94,111		51,293		10,081		2,632		54·50		10·71		19·65	
„ „ 1897-98	54		4·11		84,289		43,142		8,281		2,215		51·17		9·82		19·19	
„ „ 1896-97	70		4·57		130,420		50,274		11,080		2,424		38·54		8·49		22·04	
„ „ 1895-96	101		8·80		139,707		65,685		11,981		1,361		47·01		8·57		18·24	
„ „ 1894-95	115		7·35		189,662		90,611		16,560		2,253		47·77		8·73		18·27	
„ „ 1893-94	116		10·75		157,407		74,282		11,525		1,071		47·19		7·32		15·51	
„ „ 1892-93	92		6·32		120,996		55,124		10,712		1,695		45·55		8·85		19·43	
„ „ 1891-92	95		10·99		140,760		72,064		13,464		1,225		51·19		9·56		18·68	
„ „ 1890-91	121		9·32		164,733		81,602		14,600		1,566		49·53		8·86		17·89	
„ „ 1889-90	131		14·18		228,189		106,564		16,625		1,172		46·69		7·28		15·60	
„ „ 1888-89	150		15·47		245,680		120,476		21,259		1,374		49·03		8·65		17·64	
„ „ 1887-88	148		21·26		346,412		171,663		30,499		1,434		49·55		8·80		17·77	
„ „ 1886-87	128		24·00		409,766		208,863		34,437		1,435		50·97		8·40		16·49	
„ „ 1885-86	93		16·05		370,606		155,649		26,159		1,629		42·00		7·06		16·81	
„ „ 1884-85	151		20·59		455,848		206,738		35,701		1,734		45·35		7·83		17·27	
„ „ 1883-84	80		...		210,329		97,159		18,970		...		46·19		9·02		19·52	
Total	1,771		183·03		3,617,301		1,714,539		303,949		1,661		47·39		8·43		17·73	

STATEMENT IX.

Miscellaneous Crops.

	Matikalai (*Phaseolus mungo, var. radiatus*).																	
	Cachar.		Sylhet.		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total up to the end of	
	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Number of experiments	...	...	...	2	2	...	4	...	5	1	8	11	1	1	21	28	2,063	2,106
Total area experimented upon ...	...	...	...	0·67	0·67	...	1·33	...	1·67	0·33	2·67	3·67	0·33	0·33	7·00	9·33	164·82	179·15
Total crop gathered, in lbs.	...	...	...	386	96	...	315	...	371	134	744	1,489	166	226	5,270	5,662	80,553	88,450
Maximum per acre, in lbs.	...	...	...	540	189	...	425	...	279	406	536	975	503	685	1,345	1,327	2,100	2,100
Minimum " "	...	...	...	503	99	...	111	...	201	406	92	74	503	685	357	173	18	18
Average " "	...	...	...	576	143	...	237	...	222	406	278	406	503	685	753	607	489	494

	Mung (*Phaseolus mungo*).						Radish.				Linseed.				*Til* (sesamum.)			
	Kamrup.		Sibsagar.		Total up to the end of		Sylhet.		Total up to the end of		Sylhet.		Total up to the end of		Kamrup.		Total up to the end of	
	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.
1	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Number of experiments	1	...	...	...	148	148	1	1	33	34	2	1	39	40	3	...	106	106
Total area experimented upon ...	0·33	...	...	...	32·72	32·72	0·33	0·33	15·78	16·11	0·67	0·33	9·07	9·40	1·00	...	29·72	29·72
Total crop gathered, in lbs.	86	...	...	...	10,954	10,954	22	123	5,639	5,762	293	206	3,854	4,060	111	...	8,432	8,432
Maximum per acre, in lbs.	260	...	...	...	1,003	1,003	67	373	1,028	1,028	549	624	4,020	4,020	129	...	1,058	1,058
Minimum " "	260	...	...	...	29	29	67	373	36	36	370	624	150	150	92	...	30	30
Average " "	260	...	...	...	335	335	67	373	357	358	437	624	425	432	111	...	283	283

	Cotton.				Potato.						Jute.						*Khesari* (pulses).			
	Garo Hills.		Total up to the end of		Khasi and Jaintia Hills		Lakhimpur.		Total up to the end of		Sylhet.		Goalpara.		Total up to the end of		Kamrup.		Total up to the end of	
	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.
1	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
Number of experiments	9	4	69	73	12	10	...	...	19	29	8	6	...	3	56	65	...	...	1	1
Total area experimented upon ...	3·00	1·33	23·73	25·06	3·13	2·85	...	...	4·91	7·76	2·65	1·91	...	1·00	15·71	18·62	...	...	0·07	0·07
Total crop gathered, in lbs.	1,561	785	8,226	9,011	12,242	11,993	...	...	16,996	28,989	2,741	1,800	...	813	17,157	19,770	...	...	33	33
Maximum per acre, in lbs.	1,401	1,234	1,401	1,401	10,597	8,434	...	...	10,597	10,597	1,536	1,364	...	895	2,500	2,500	...	...	471	471
Minimum " "	14	256	62	62	1,074	1,358	...	...	981	981	504	494	...	728	84	84	...	...	471	471
Average " "	1,561	590	347	360	3,924	4,208	...	...	3,461	3,736	1,034	946	...	813	1,092	1,062	...	...	471	471

STATEMENT X.

Mustard and Rape-seed.

	Cachar.		Sylhet.		Total Surma Valley.		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total Brahmaputra Valley.		Total for the province.		Total for the province up to the end of	
	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Number of experiments	2	1	12	14	14	15	1	5	6	9	2	2	9	12	4	4	9	7	31	39	45	54	2,307	2,361
Total area cut, in acres	0·67	0·33	4·00	4·67	4·67	5·00	0·33	1·67	2·00	3·00	0·67	0·67	3·00	4·00	1·33	1·33	3·00	2·33	10·33	13·00	15·00	18·00	767·34	785·34
Total crop reaped, in lbs.	263	107	1,345	2,130	1,608	2,237	117	1,002	902	1,337	379	302	1,256	2,160	565	741	2,529	1,963	5,748	7,505	7,356	9,742	395,751	405,493
Maximum per acre, in lbs.	399	324	432	1,234	432	1,234	354	938	740	592	617	475	802	926	794	586	1,345	1,358	1,345	1,358	1,345	1,358	2,190	2,190
Minimum " "	390	324	240	241	240	241	354	154	234	204	521	431	154	137	308	494	308	555	154	137	154	137	21	21
Average " "	392	324	336	456	344	447	354	600	451	446	365	451	414	540	425	557	843	842	556	577	490	541	516	516

STATEMENT XI.

Experiments by Supervisor Kanungos and Mandals.

—	Ahu.																							Sali.																
	Broadcast.											Transplanted.												Bar dhan.												Lahi dhan.										
	Dhubri.	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Goalpara.	Dibrugarh.	North Lakhimpur.	Total (excluding Dhubri) up to the end of 1900-1901.	Dhubri.	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Goalpara.	Dibrugarh.	North Lakhimpur.	Total (excluding Dhubri) up to the end of 1900-1901.	Dhubri.	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Goalpara.	Dibrugarh.	North Lakhimpur.	Total (excluding Dhubri) up to the end of 1900-1901.	Dhubri.	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Goalpara.	Dibrugarh.	North Lakhimpur.	Total (excluding Dhubri) up to the end of 1900-1901.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Number of experiments	31	88	12	...	2	5	41	13	10	5	290	...	67	...	12	30	...	26	...	...	...	176	19	80	21	27	65	69	105	42	9	6	1,140	...	91	8	25	14	5	34	15	3	...	401
Total area cut, in acres	10·33	29·33	10·67	...	0·67	1·67	13·67	4·33	3·33	1·67	96·66	...	22·33	...	4·00	10·00	...	8·67	...	...	...	58·67	6·33	26·67	7·00	9·00	21·67	23	35·00	14·00	3·00	2·00	379·99	...	30·33	2·67	8·33	4·67	1·67	11·33	5·00	1·00	...	133·66
Total crop reaped, in lbs.	14,180	29,645	9,517	...	994	1,549	13,091	5,134	3,723	1,824	104,013	...	24,381	...	3,148	12,834	...	6,584	...	...	...	69,027	11,929	34,420	7,046	11,545	28,684	28,495	42,054	14,076	4,013	2,620	526,164	...	26,491	2,022	6,362	3,585	1,667	10,042	4,851	828	...	142,150
Maximum per acre, in lbs.	1,904	1,728	1,598	...	1,574	1,129	1,775	1,401	2,098	1,635	2,214	...	1,098	...	1,296	1,932	...	1,049	...	...	...	2,456	2,294	2,416	1,282	2,049	2,481	2,407	2,206	1,759	1,693	1,784	3,198	...	1,790	1,333	1,444	1,173	1,432	1,189	1,575	1,101	...	2,203
Minimum " "	771	307	376	...	1,407	679	399	1,024	920	531	309	...	327	...	280	728	...	177	...	...	...	177	1,535	278	604	649	525	540	272	463	814	1,032	272	...	259	444	432	309	713	568	562	648	...	56
Average " "	1,373	1,011	893	...	1,483	930	957	1,109	1,119	1,092	1,076	...	1,101	...	787	1,283	...	760	...	...	...	1,176	1,884	1,291	1,007	1,283	1,324	1,339	1,202	1,005	1,338	1,316	1,384	...	873	757	824	768	1,000	896	970	828	...	1,063

STATEMENT XI—*continued.*

Matikalai.										Mustard.										Sugarcane.										*Bao.* Broadcast.										Transplanted.									
Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total up to the end of 1900-1901.	Dhubri.	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	North Lakhimpur.	Total up to the end of 1900-1901 (excluding Dhubri).	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total up to the end of 1900-1901.	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total up to the end of 1900-1901.	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total up to the end of 1900-1901.
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
47		...	3	11	38	21	1	2	335	12	94	43	...	9	2	39	26	6	401	78	17	...	15	8	16	13	...	...	352	73	20	...	7	...	6	...	...	1	189	...	...	...	...	...	...	...	...	...	2
15·67	...	...	1·00	3·67	12·67	7·00	0·33	0·67	111·43	4·00	31·33	14·33	...	3·00	0·67	13·00	8·67	2·00	133·65	5·20	1·13	...	1·00	0·53	1·07	0·87	...	...	22·07	24·33	6·67	...	2·33	...	2·00	...	...	0·33	63·00	...	...	...	...	...	...	...	...	...	0·67
1,796	...	...	155	895	5,545	3,036	72	216	31,817	2,543	10,291	5,675	...	1,101	247	5,940	3,855	710	51,842	7,110	1,484	...	2,073	1,431	1,916	2,122	...	...	38,639	19,806	5,937	...	2,424	...	529	...	...	354	62,721	...	...	...	...	...	...	...	...	...	1,044
[illegible]		...	197	364	864	667	216	364	1,079	833	815	852	...	617	463	752	653	444	1,388	...	...	...	...	...	...	...	...	...	...	1,833	1,794	...	1,635	...	500	...	...	1,062	2,401	...	...	...	...	...	...	...	...	...	1,677
14			114	131	216	139	216	284	14	506	68	74	...	216	279	247	284	272	54	...	...	...	...	...	...	...	...	...	...	296	512	...	652	...	117	...	...	1,062	117	...	...	...	...	...	...	...	...	...	1,155
115			155	244	438	437	216	324	286	636	328	396	...	367	371	457	445	355	388	1,367	1,313	...	2,073	2,684	1,797	2,467	...	...	1,751	814	890	...	1,039	...	265	...	...	1,062	996	...	...	...	...	...	...	...	...	...	1,558

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ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

FOR THE YEAR

1901-1902.

BY

B. C. ALLEN, Esq., B.A., I.C.S.,
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FROM

B. C. ALLEN, Esq., B.A., I.C.S.,

Offg. Director, Department of Land Records and Agriculture, Assam,

TO

THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Shillong, the 9th July 1902.

SIR,

I HAVE the honour to submit the Annual Note on Crop Experiments carried out in Assam during the year 1901-1902.

I have the honour to be,

SIR,

Your most obedient Servant,

B. C. ALLEN,

Offg. Director, Department of Land Records and Agriculture, Assam.

ANNUAL NOTE

ON

CROP EXPERIMENTS IN ASSAM

FOR

1901-1902.

INTRODUCTORY.

As in the three preceding years, experiments were made both under the Mauza Book Rules and under the ordinary Crop Cutting Rules, which still continue to be in force in those parts of the province where the mauza book has not been introduced. This Note has been divided into two sections—Section I dealing with the experiments made by superior officers, *e.g.*, District and Subdivisional Officers, Sub-Deputy Collectors, Tahsildars and mauzadars, etc., under either set of rules, and Section II dealing exclusively with the experiments made by the Supervisor Kanungos and mandals under the Mauza Book Rules.

SECTION I.

EXPERIMENTS MADE BY SUPERIOR OFFICERS.

Nature of experiments.

2 During the year experiments were made, as usual, to ascertain the outturn of—

(*a*) Rice of various kinds (Statements I to VII).
(*b*) Sugarcane (Statement VIII).
(*c*) Miscellaneous crops (Statement IX).
(*d*) Mustard (Statement X).

In estimating the outturn of crops, the maund has been taken, as usual, at 82⅔lbs., and the *bigha* at one-third of an acre. In all statements of outturn in this Note the figures represent outturn in pounds per acre.

Number of experiments.

3. The total number of experiments made was 515, as compared with 584 in the preceding year and 706 in 1899-1900. The decrease was most noticeable in Lakhimpur, where there were only 37 crop cuttings, against 80 in the preceding year. The number of experiments in *sali* in Nowgong (4) was also insufficient. The manner in which the experiments were made was, on the whole, satisfactory, and the number rejected was less than in the previous year.

A.—RICE (STATEMENTS I—VII).

4. The figures of outturn represent the yield in unhusked rice.

I.—BRAHMAPUTRA VALLEY (STATEMENTS I—III).

Brahmaputra Valley rice experiments.

The most important food crop of the valley is *sali dhan*, which, for the purpose of crop experiments, is divided into two varieties—*bar* and *lahi*—the former giving the larger outturn and the latter the finer quality of rice. The average yield for the valley was 17·4 maunds of *bar* and 12·6 maunds of *lahi* per acre, which is better than the outturn for the previous year (16·2 maunds and 8·9 maunds), but lower than the average of all the experiments made up to date (21·0 maunds and 15·4 maunds). It is noteworthy that the outturn varies considerably in different districts.

The following statement shows the average yield of *bar dhan* per acre for the last five years:

	Maunds.		Maunds.
Goalpara	24·7	Nowgong ...	19·1
Kamrup	18·8	Sibsagar ...	16·8
Darrang	21·2	Lakhimpur ...	19·6

The poor yield in Sibsagar is confirmed by the fact that, though the area under rice per thousand of the population is considerably larger than in Lakhimpur, the price of rice is usually higher in the former than in the latter district.

The average outturn of *ahu* was—broadcast 14·2 maunds per acre and transplanted 16·4 maunds. The average for *bao* broadcast was 14·6 maunds, which was slightly less than the average of all the experiments made in this grain up to date.

SYLHET (STATEMENT IV).

Sylhet rice experiments.

The *sail* of Sylhet corresponds to the *sali* of the Assam Valley, *aus* and *murali* to *ahu*, and *aman* and *kataria* to *bao*. *Sailbura* corresponds to the *boro* rice of Bengal, which is grown in *haors* or large natural depressions in the soil, and is sown in October and November, transplanted in December to February, and reaped in April and May. It has no equivalent in Assam. High-land *aus* yielded, transplanted 16·8 maunds and broadcast 15·5 maunds per acre, the former being slightly below, and the latter considerably above, the average. *Sail* was a very good crop (21·9 maunds, as compared with an average of 17·6 maunds). The yield of *sailbura* on the experiments was only about two-thirds of the average, but low-land *aman* shows as the result of 28 experiments an outturn of over 25 maunds per acre.

CACHAR RICE (STATEMENT V).

Cachar rice experiments.

Altogether 46 cuttings of rice were made, which yielded an average outturn of 16·9 maunds per acre, which is considerably above the average. The yield was particularly good in the case of *asra* (19·5 maunds) and *murali*, which correspond to the *bao* and *ahu* of the Assam Valley.

HILL RICE (STATEMENTS VI AND VII).

Hill rice experiments.

The outturn per acre in the Khasi and Jaintia Hills was very low, being only 7·1 maunds for up-land and 9·0 maunds for low-land rice. This was below the average. In the Garo Hills, the crop was good, but the number of experiments made was small.

B.—SUGARCANE (STATEMENT VIII).

Sugarcane experiments.

5. Thirty-nine experiments were made during the year. The average outturn of *gur* (molasses) is shown in the following abstract:

	Brahmaputra Valley. Lbs.	Surma Valley. Lbs.
Quinquennial average ...	2,320	2,139
1900-1901	2,154	2,203
1901-1902	1,658	2,493

The above shows the crop to have been a poor one in the Brahmaputra Valley, but much above the average in the Surma Valley.

D.—MUSTARD (STATEMENT X).

Mustard experiments.

6. Thirty-eight experiments were made, which showed an average outturn of 5·0 maunds per acre, which is considerably less than the average of the total number made up to date (6·3 maunds). The outturn was especially poor in Kamrup (4·3 maunds on 12 experiments), where there is a large area under this crop.

Rejected experiments.

7. The number of experiments rejected was comparatively small (19 against 36 in the preceding year). The reasons for rejection were—

Number of experiments rejected owing to area cut being above or below the standard area	8
Number rejected because crops cut were not of fair average character ...	7
Number of experiments rejected as untrustworthy	4
Total	19

Owing to the peculiar conditions of the Khasi and Jaintia Hills, the limitation of the area cut to one *bigha* in case of potatoes was not insisted upon. Some experiments made in Sylhet, in which the area cut was returned in local measures, which are known to vary in different parts of the district, had also to be rejected.

Experimenting officers.

8. The superior officers who carried out experiments comprised Mr. J. C. Arbuthnott, C.I.E., Deputy Commissioner of Sibsagar, Captain H. W. G. Cole, Deputy Commissioner of Darrang, 19 Sub-Deputy Collectors, and 11 Tahsildars, who are not Sub-Deputy Collectors. Mr. J. C. Arbuthnott and Captain Cole are the only officers of the Commission who carried out any crop experiments during the year. The number of experiments made by Sub-Deputy Collectors in the Brahmaputra Valley under the Mauza Book Rules showed a satisfactory increase, having risen from 43 in 1900-1901 to 67 in the year under report. The following Sub-Deputy Collectors did not make a single cutting, although the duty of conducting experiments was expressly imposed upon them by the Mauza Book Rules :—Babu Ram Kumar Aditya and Babu Bhola Nath Das, Dibrugarh, and Babu Prabhat Chandra Chatterji, Mangaldai. Babus Mahendra Chandra De and Sarat Chandra Lahiri made only one experiment each.

SECTION II.

EXPERIMENTS MADE BY SUPERVISOR KANUNGOS AND MANDALS.

9. A large number of experiments were carried out by Supervisor Kanungos and mandals, under the Mauza Book Rules in the districts of Kamrup, Darrang, Sibsagar and Lakhimpur, and a number of experiments in *ahu* and mustard were made by the same agency in the temporarily-settled parts of Goalpara, where the mauza book has not been introduced.

The following statement shows the number of experiments made by superior and inferior officers, and the average outturn obtained in the five upper districts of the Assam Valley :

1901-1902.

	Superior officers.		Inferior officers.	
	Number of experiments.	Outturn. Lbs.	Number of experiments.	Outturn. Lbs.
Sali, bar	48	1,247	428	1,289
„ *lahi*	19	1,033	242	1,059
Ahu, transplanted	10	1,346	170	1,188
„ broadcast	30	1,131	241	995
Bao	21	1,125	177	935
Sugarcane	19	1,658	202	1,579
Matikalai	19	319	202	305
Mustard	23	368	247	381

In the case of all crops except *sali* and mustard, the experiments made by superior officers show a higher yield which, in the case of *ahu* and *bao*, is very pronounced. The causes of this difference cannot be ascertained with any degree of certainty. It may be due to a superior officer who only makes a few experiments unconsciously selecting a crop somewhat above the average for the purpose, or it may be due to mandals who are themselves interested in the rates of revenue being kept low either deliberately submitting false returns or not being sufficiently careful to see that all the grain is threshed out and weighed.

Shillong,

The 7th July 1902.

B. C. ALLEN,

Offg. Director, Department of Land Records and Agriculture, Assam.

Appendix A.

STATEMENT I.

Sali.

—		Goalpara.		Kamrup.		Darrang.	
		Bar dhan.	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*
1		2	3	4	5	6	7
Number of experiments	1900-1901	10	...	2	4	21	2
	1901-1902	12	...	7	8	11	6
Total area cut, in acres ...	1900-1901	3·33	...	0·67	1·33	7·00	0·67
	1901-1902	4·00	...	2·33	2·67	3·67	2·00
Total crop reaped, in lbs....	1900-1901	6,417	...	796	1,142	9,751	613
	1901-1902	8,695	...	2,508	2,704	5,194	2,173
Maximum per acre, in lbs....	1900-1901	2,166	...	1,531	1,066	2,221	1,111
	1901-1902	2,697	...	1,443	1,929	2,049	1,944
Minimum " " ...	1900-1901	1,302	...	858	668	771	728
	1901-1902	1,641	...	996	486	738	306
Average " " ...	1900-1901	1,927	...	1,188	859	1,393	915
	1901-1902	2,174	...	1,076	1,012	1,415	1,086

—		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Bar dhan.	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*	*Bar dhan.*	*Lahi dhan.*
		8	9	10	11	12	13	14	15
Number of experiments ...	1900-1901	6	2	24	4	30	...	93	12
	1901-1902	3	1	17	4	10	...	60	19
Total area cut, in acres.	1900-1901	2·00	0·67	8·00	1·33	10·00	...	31·00	4·00
	1901-1902	1·00	0·33	5·67	1·33	3·33	...	20·00	6·33
Total crop reaped, in lbs.	1900-1901	1,699	422	9,642	961	12,895	...	41,201	2,938
	1901-1902	905	434	6,854	1,230	4,497	...	28,653	6,541
Maximum per acre, in lbs.	1900-1901	1,080	771	1,998	926	1,882	...	2,221	1,111
	1901-1902	1,047	1,315	2,067	1,335	1,881	...	2,697	1,302
Minimum per acre, in lbs.	1900-1901	494	494	617	555	494	...	494	494
	1901-1902	783	1,315	456	561	1,110	...	456	306
Average per acre, in lbs.	1900-1901	850	631	1,205	723	1,290	...	1,329	735
	1901-1902	905	1,315	1,208	924	1,350	...	1,433	1,033

Total number of experiments up to the close of the year 1901-1902 with *sali dhan*	4,809
Total area cut, in acres	1,5,59·03
Total crop reaped, in lbs.	2,449,774
Average outturn per acre, in lbs.	1,571

For fourteen years—1888-89 *to* 1901-1902.

—	*Bar dhan.*	*Lahi dhan.*
1	2	3
Total number of experiments	2,075	727
Total area cut, in acres	653·08	197·41
Total crop reaped, in lbs.	1,128,744	250,397
Average outturn per acre, in lbs.	1,728	1,268

STATEMENT II.

Ahu.

—		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	1900-1901 ...	7	...	12	3	...	22	21	...	3	...	5	...	48*	25*
	1901-1902 ...	5	...	13	1	...	9	7	...	5	...	5	...	35	10
Total area cut, in acre	1900-1901 ...	2·33	...	4·00	1·00	...	7·33	7·00	...	1·00	...	1·67	...	16·00*	8·33*
	1901-1902 ..	1·67	...	4·33	0·33	...	3·00	2·33	...	1·67	...	1·67	...	11·67	3·33
Total crop reaped, in lbs.	1900-1901 ..	3,241	...	5,148	1,378	...	8,987	9,084	...	1,128	...	2,339	...	20,940*	10,365*
	1901-1902 ...	2,361	...	4,303	627	...	3,856	3,513	...	2,042	...	1,459	...	13,678	4,483
Maximum per acre, in lbs.	1900-1901 ...	2,080	...	1,759	1,524	...	1,919	1,882	...	1,302	...	1,851	...	2,080	1,919
	1901-1902 ...	1,863	...	1,443	1,900	...	2,100	2,558	...	1,557	...	1,170	...	2,558	2,100
Minimum ,, ,, ...	1900-1901 ...	1,018	...	802	1,277	...	576	494	...	892	...	863	...	494	576
	1901-1902 ...	1,128	...	660	1,900	...	888	987	...	1,059	...	603	...	603	888
Average ,, ,, ...	1900-1901 ...	1,391	...	1,287	1,378	...	1,226	1,298	...	1,128	...	1,401	...	1,308*	1,244*
	1901-1902 ...	1,413	...	993	1,900	...	1,285	1,507	...	1,222	...	873	...	1,172	1,346

Total number of experiments made up to the end of the year 1901-1902	2,365
Total area cut, in acres	793·20
Total crop reaped, in lbs.	1,061,136
Average outturn per acre, in lbs.	1,338

* Revised figures.

STATEMENT III.

Bao.

—		Goalpara.		Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total.	
		Broad cast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Broadcast.	Transplanted.
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments	1900-1901 ...	...	...	2	...	...	...	...	...	...	...	1	...	3	...
	1901-1902 ...	1	...	7	...	...	...	...	...	...	...	14	...	22	...
Total area cut, in acres	1900-1901 ...	...	...	0·67	...	...	...	...	...	...	...	0·33	...	1·00	...
	1901-1902 ...	0·33	...	2·33	...	...	...	...	...	...	...	4·67	...	7·33	...
Total crop reaped, in lbs.	1900-1901 ...	...	...	813	...	...	...	...	...	...	...	267	...	1,080	...
	1901-1902 ...	915	...	2,159	...	...	...	...	...	...	...	5,715	...	8,789	...
Maximum per acre, in lbs. ...	1900-1901 ...	...	...	1,543	...	...	...	...	...	...	...	809	...	1,543	...
	1901-1902 ...	2,745	...	1,234	...	...	...	...	...	...	...	1,881	...	2,745	...
Minimum ,, ,, ...	1900-1901 ...	...	...	895	...	...	...	...	...	...	...	809	...	809	...
	1901-1902 ...	2,745	...	1,110	...	...	...	...	...	...	...	669	...	669	...
Average ,, ,, ...	1900-1901 ...	...	...	1,213	...	...	...	...	...	...	...	80	...	1,080	...
	1901-1902 ...	2,773	...	926	...	...	...	...	...	...	...	1,223	...	1,199	...

Total number of experiments made up to the close of the year 1901-1902 with *bao dhan* ...	590
Total area cut, in acres	190·58
Total crop reaped, in lbs.	233,663
Average outturn per acre, in lbs.	1,226

STATEMENT IV.

Sylhet Rice.

—	Low-land *aus*.			High-land *aus*.						*Murali*.			*Sail*.		
				Transplanted.			Broadcast.								
	1900-1901.	1901-1902.	Total of fourteen years ending 1901-1902.	1900-1901.	1901-1902.	Total of fourteen years ending 1901-1902.	1900-1901.	1901-1902.	Total of fourteen years ending 1901-1902.	1900-1901.	1901-1902.	Total of fourteen years ending 1901-1902.	1900-1901.	1901-1902.	Total of nineteen years ending 1901-1902.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Number of experiments	...	...	31	1	5	52	...	6	72	1	2	14	23	19	596
Total area cut, in acres...	...	...	8·96	0·33	1·67	13·79	...	2·00	18·31	0·33	0·67	3·86	7·31	6·33	165·90
Total crop reaped, in lbs.	...	...	11,229	603	2,313	19,741	...	2,544	19,885	595	534	4,408	10,328	11,436	240,447
Maximum per acre, in lbs.	...	...	3,218	1,827	1,728	2,432	...	1,833	3,786	1,803	936	2,152	2,320	3,207	4,986
Minimum „ „	...	...	360	1,827	936	480	...	740	204	1,803	666	420	401	939	159
Average „ „	...	...	1,258	1,827	1,385	1,431	...	1,272	1,086	1,803	797	1,141	1,413	1,806	1,449

—	*Sail bura*.			High-land *aman*.						*Kataria*.			Low-land *aman*.		
				Transplanted.			Broadcast.								
	1900-1901.	1901-1902.	Total of nineteen years ending 1901-1902.	1900-1901.	1901-1902.	Total of fourteen years ending 1901-1902.	1900-1901.	1901-1902.	Total of fourteen years ending 1901-1902.	1900-1901.	1901-1902.	Total of fourteen years ending 1901-1902.	1900-1901.	1901-1902.	Total of fourteen years ending 1901-1902.
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Number of experiments ...	13	10	305	...	2	45	...	...	121	...	...	34	29	28	321
Total area cut, in acres ...	4·25	3·33	89·23	...	0·67	11·44	...	...	34·05	...	...	9·25	9·50	9·82	97·58
Total crop reaped, in lbs. ..	8,068	3,717	145,045	...	863	15,664	...	...	52,908	...	...	13,257	10,025	20,318	131,610
Maximum per acre, in lbs....	2,641	2,468	4,363	...	1,356	2,468	...	...	7,808	...	...	2,319	2,483	3,207	3,333
Minimum „ „	1,259	123	123	...	1,234	282	...	...	198	...	...	291	370	987	135
Average „ „	1,898	1,116	1,625	...	1,288	1,369	...	...	1,554	...	...	1,433	1,055	2,068	1,348

STATEMENT V.

Cachar Rice.

—	*Dumai*.			*Murali*.					*Asra*.			*Sail*.		
				1900-1901.		1901-1902.								
	1900-1901.	1901-1902.	Total of fourteen years ending 1901-1902.	Broadcast.	Transplanted.	Broadcast.	Transplanted.	Total of fourteen years ending 1901-1902.	1900-1901.	1901-1902.	Total of fourteen years ending 1901-1902.	1900-1901.	1901-1902.	Total of fourteen years ending 1901-1902.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of experiments ...	3	...	31	6	5	6	7	134	7	8	65	20	25	498
Total area cut, in acres ...	1·00	...	9·33	2·00	1·67	2·00	2·33	39·98	2·33	2·67	20·66	6·67	8·33	156·46
Total crop reaped, in lbs. ...	905	...	9,172	1,941	2,067	2,701	3,329	48,591	3,334	4,296	28,753	3,890	12,225	215,338
Maximum per acre, in lbs.	1,111	...	1,560	1,338	1,350	2,004	2,055	2,877	1,836	1,920	2,511	937	1,836	3,200
Minimum „ „ ...	555	...	330	576	1,074	465	450	162	624	1,182	606	174	820	38
Average „ „ ...	905	...	983	971	1,246	1,350	1,428	1,243	1,431	c 1,609	1,391	583	1,467	1,376

STATEMENT VI.

Khasi and Jaintia Hills Rice.

—	Up-land rice.			Low-land rice.		
	1900-1901.	1901-1902.	Total (20 years ending 1901-1902).	1900-1901.	1901-1902.	Total (20 years ending 1901-1902).
1	2	3	4	5	6	7
Number of experiments	27	26	826	104	86	1,267
Total area cut, in acres	9·00	8·17	233·47	34 67	27·29	369·63
Total crop reaped, in lbs.	4,402	4,785	172,101	22,059	20,190	320,628
Maximum per acre, in lbs.	814	1,017	2,264	1,512	5,868	5,868
Minimum " "	185	135	40	247	195	61
Average " "	489	585	737	636	739	867

STATEMENT VII.

Garo Hills Rice.

	Ahu.			*Sali.*		
	1900 1901.	1901-1902.	Total (20 years ending 1901-1902).	1900 1901.	1901-1902.	Total (20 years ending 1901-1902).
	2	3	4	5	6	7
Number of experiments	6	6	181	2	2	49
Total area cut, in acres	2·00	2·00	58·41	0 67	0·67	15·55
Total crop reaped, in lbs.	2,184	2,957	58,325	1,249	1,419	25,654
Maximum per acre, in lbs.	1,561	2,223	2,223	2,172	2,220	2,961
Minimum " "	741	1,074	216	1,574	2,037	444
Average " "	1,092	1,478	998	1,864	2,128	1,649

STATEMENT VIII.

STATEMENT

Sugar

District.	Number of experiments.		Total area cut, in acres.		Total weight of cane, in lbs.	
	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.
1	2	3	4	5	6	7
Cachar	...	9	...	1·36	...	27,368
Sylhet	11	11	1·02	0·74	21,244	28,353
Total for Surma Valley	11	20	1·02	2·10	21,244	55,721
Goalpara	...	...	...	...	...	...
Kamrup	3	9	0·20	0·60	3,667	13,079
Darrang	2	...	0·13	...	1,747	...
Nowgong	1	5	0·07	0·33	689	4,525
Sibsagar	8	5	0·53	0·33	16,457	6,122
Lakhimpur	9	...	0·60	...	17,103	...
Total for Brahmaputra Valley	23	19	1·53	1·26	39,663	23,726
Total for the Province	34	39	2·55	3·36	60,907	79,447
Total for 1901-1902	39		3·36		79,447	
" " 1900-1901	34		2·55		60,907	
" " 1899-1900	42		2·89		67,479	
" " 1898-99	50		3·83		94,111	
" " 1897-98	54		4·11		84,289	
" " 1896-97	70		4·57		130,420	
" " 1895-96	101		8·80		139,707	
" " 1894-95	115		7·35		189,662	
" " 1893-94	116		10·75		157,497	
" " 1892-93	92		6·32		120,996	
" " 1891-92	95		10·99		140,760	
" " 1890-91	121		9·32		164,733	
" " 1889-90	131		14·18		228,189	
" " 1888-89	150		15·47		245,680	
" " 1887-88	148		21·26		346,412	
" " 1886-87	128		24·00		409,766	
" " 1885-86	93		16·05		370,606	
" " 1884-85	151		20·59		455,848	
" " 1883-84	80		.....		210,329	
Total	1,810		186·39		3,696,748	

VIII.

cane.

Weight of juice, in lbs.		Weight of *gur* (molasses), in lbs.		Weight of *gur* (molasses) per acre, in lbs.		Pounds of juice per 100 lbs. of cane.		Pounds of *gur* (molasses) per 100 lbs. of cane.		Weight of *gur* (molasses) per 100 lbs. of juice.	
1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.
8	9	10	11	12	13	14	15	16	17	18	19
...	18,098	...	2,768	...	2,035	...	66·12	...	10·11	...	15·29
8,681	11,072	2,247	2,468	2,203	3,335	40·86	39·05	10·58	8·70	25·88	22·29
8,681	29,170	2,247	5,236	2,203	2,493	40·86	52·33	10·58	9·39	25·88	17·94
...	...	...	...	...	...	...	...	...	...	...	...
1,215	5,962	222	989	1,110	1,648	33·13	45·58	6·05	7·56	18·27	16·58
915	...	185	...	1,388	...	52·37	...	10·59	...	20·22	...
185	2,094	41	439	617	1,330	26·85	46·27	5·95	9·70	22·16	20·96
9,869	3,762	1,572	662	2,948	2,006	59·97	61·45	9·55	10·81	15·93	17·59
7,558	...	1,448	...	2,413	...	44·19	...	8·47	...	19·16	...
19,742	11,818	3,468	2,090	2,154	1,658	49·77	49·81	8·74	8·80	17·56	17·68
28,423	40,988	5,715	7,326	2,241	2,180	46·67	51·57	9·38	9·22	20·11	17·87
40,988		7,326		2,180		51·57		9·22		17·87	
28,423		5,715		2,241		46·67		9·38		20·11	
34,927		6,300		2,180		51·76		9·34		18·04	
51,293		10,081		2,632		54·50		10·71		19·65	
43,142		8,281		2,215		51·17		9·82		19·19	
50,274		11,080		2,424		38·54		8·49		22·04	
65,685		11,981		1,361		47·01		8·57		18·24	
90,611		16,560		2,253		47·77		8·73		18·27	
74,282		11,525		1,071		47·19		7·32		15·51	
55,124		10,712		1,695		45·55		8·85		19·43	
72,064		13,464		1,225		51·19		9·56		18·68	
81,602		14,600		1,566		49·53		8·86		17·89	
106,564		16,625		1,172		46·69		7·28		15·60	
120,476		21,259		1,374		49·03		8·65		17·64	
171,663		30,499		1,434		49·55		8·80		17·77	
208,863		34,437		1,435		50·97		8·40		16·49	
155,649		26,159		1,629		42·00		7·06		16·81	
206,738		35,701		1,734		45·35		7·83		17·27	
97,159		18,970		.....		46·19		9·02		19·52	
1,755,527		311,275		1,670		47·48		8·42		17·73	

STATEMENT

Miscellaneous

—	*Matikalai (Phaseolus*					
	Cachar.		Sylhet.		Goalpara.	
	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.
1	2	3	4	5	6	7
Number of experiments	...	1	2	2	...	5
Total area experimented upon...	...	0·33	0·67	0·67	...	1·67
Total crop gathered, in lbs.	...	102	386	536	...	520
Maximum per acre, in lbs.	...	309	540	1,263	...	405
Minimum „ „	...	309	503	333	...	228
Average „ „	...	309	576	800	...	311

—	Jute.					
	Sylhet.		Goalpara.		Total up to the end of	
	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.
	20	21	22	23	24	25
Number of experiments	6	1	3	3	65	69
Total area experimented upon	1·91	0·33	1·00	1·00	18·62	19·95
Total crop gathered, in lbs.	1,806	493	813	1,198	19,776	21,467
Maximum per acre, in lbs.	1,364	1,479	895	1,482	2,500	2,500
Minimum „ „	494	1,479	728	1,125	84	84
Average „ „	946	1,479	813	1,198	1,062	1,076

STATEMENT

Mus

—	Cachar.		Sylhet.		Total Surma Valley.		Goalpara.		Kamrup.	
	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.
1	2		4	5	6	7	8	9	10	11
Number of experiments ...	1	...	14	13	15	13	5	5	9	12
Total area cut, in acres ...	0·33	...	4·67	4·33	5·00	4·33	1·67	1·67	3·00	4·00
Total crop reaped, in lbs. ...	107	...	2,130	1,770	2,237	1,770	1,002	1,069	1,337	1,418
Maximum per acre, in lbs. ...	324	...	1,234	987	1,234	987	938	808	592	936
Minimum „ „ ...	324	...	241	135	241	135	154	509	204	123
Average „ „ ...	324	...	456	408	447	409	600	640	446	354

IX.

Crops.

mungo. var. radiatus).

Kamrup.		Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total up to the end of	
1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.
8	9	10	11	12	13	14	15	16	17	18	19
...	5	1	2	11	6	1	...	28	6	2,106	2,133
...	1·67	0·33	0·67	3·67	2	0·33	...	9·33	2	179·15	188·16
...	366	134	119	1,489	866	226	...	5,662	674	88,450	91,633
...	462	406	213	975	647	685	...	1,327	399	2,100	2,100
...	113	406	141	74	185	685	...	173	276	18	18
...	219	406	177	406	433	685	...	607	337	494	487

Cotton.				Radish.				Linseed.				Potato.			
Garo Hills.		Total up to the end of		Sylhet.		Total up to the end of		Sylhet.		Total up to the end of		Khasi and Jaintia Hills.		Total up to the end of	
1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
4	4	73	77	1	2	34	36	1	2	40	42	10	12	29	41
1·33	1·33	25·06	26·39	0·33	0·49	16·11	16·60	0·33	0·67	9·40	10·07	2·85	2·56	7·76	10·32
785	1,232	9,011	10,243	123	163	5,762	5,925	206	383	4,060	4,443	11,993	12,941	28,989	41,930
1,234	1,365	1,401	1,401	373	381	1,028	1,028	624	215	4,020	4,020	8,434	14,739	10,597	14,739
256	276	62	62	373	108	36	36	624	166	150	150	1,358	1,078	981	981
590	924	360	388	373	332	358	366	624	571	432	441	4,208	5,055	3,736	4,062

X.

tard.

Darrang.		Nowgong.		Sibsagar.		Lakhimpur.		Total Brahmaputra Valley.		Total for the province.		Total for the province up the end of	
1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.	1900-1901.	1901-1902.
12	13	14	15	16	17	18	19	20	21	22	23	24	25
2	3	12	5	4	1	7	2	39	28	54	41	2,361	2,402
0·67	1·00	4·00	1·67	1·33	0·33	2·33	0·67	13·00	9·34	18·00	13·67	783·34	797·01
302	312	2,160	828	741	127	1,963	141	7,505	3,895	9,742	5,665	405,493	411,158
475	387	926	924	586	384	1,358	270	1,358	924	1,358	987	2,190	2,198
431	177	137	320	494	384	555	153	137	123	137	123	21	21
451	312	540	496	557	385	842	210	577	417	541	414	516	515

STATEMENT

Experiments by Supervisor

	Broad cast.								
	Dhubri.	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.
1	2	3	4	5	6	7	8	9	10
Number of experiments ...	7	109	41	1	19	...	24	27	11
Total area cut, in acres ...	2·33	36·33	13·67	0·33	6·33	...	8·00	9·00	3·67
Total crop reaped in lbs. ...	3,028	30,171	13,737	370	7,205	...	8,918	11,787	3,790
Maximum per acre, in lbs. ...	1,869	1,789	1,875	1,121	1,481	...	1,065	1,830	1,377
Minimum " " ...	1,184	66	431	1,121	771	...	604	1,035	690
Average " " ...	1,686	830	1,004	1,121	1,152	...	1,114	1,309	1,032

Sali

	Bar dhan—contd.								
	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.
	25	26	27	28	29	30	31	32	33
Number of experiments ...	88	21	28	40	106	77	46	7	15
Total area cut, in acres ...	29·33	7·00	9·33	13·33	35·33	25·67	15·33	2·33	5·00
Total crop reaped, in lbs. ...	40,305	10,346	16,527	18,821	38,678	31,413	18,488	3,403	5,869
Maximum per acre, in lbs. ...	2,698	1,971	3,550	2,343	2,133	1,678	2,241	1,740	1,794
Minimum " " ...	369	854	1,023	444	534	498	603	1,266	540
Average " " ...	1,374	1,478	1,771	1,412	1,094	1,223	1,206	1,460	1,174

Bao—

	Broadcast—*contd.*									
	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total up to the end of 1901 1,02.	Gauhati.
	47	48	49	50	51	52	53	54	55	56
Number of experiments ...	30	5	7	...	4	...	...	22	366	...
Total area cut, in acres ...	10·00	1·67	2·33	...	1·33	...	...	7·33	121·99	...
Total crop reaped, in lbs. ...	7,748	2,261	2,053	...	564	...	...	8,202	117,910	...
Maximum per acre, in lbs. ...	1,226	1,838	1,047	...	481	...	...	1,791	2,401	...
Minimum " " ...	351	1,091	663	...	369	...	...	552	117	...
Average " " ...	774	1,353	881	...	424	...	...	1,118	966	...

XI.

Kanungos and Mandals.

Ahu.													*Sali.*
		Transplanted.											*Bardhan.*
North Lakhimpur.	Total (excluding Dhubri) up to the end of 1901-1902.	Dhubri.	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total (excluding Dhubri) up to the end of 1901-1902.	Dhubri.
11	12	13	14	15	16	17	18	19	20	21	22	23	24
9	531	...	79	16	5	52	...	18	...	...	...	346	...
3·00	176·99	...	26·33	5·33	1·67	17·33	...	6·00	...	...	...	115·33	...
3,866	183,947	...	30,405	5,509	2,067	24,932	...	4,423	...	...	...	136,363	...
1,376	2,214	...	2,207	1,449	1,542	2,440	...	968	...	...	...	2,456	...
969	66	...	185	549	1,048	647	...	543	...	...	...	177	...
1,288	1,039	...	1,154	1,033	1,237	1,432	...	737	...	...	...	1,182	...

—contd.

	Lahi dhan.											*Bao.*
												Broad cast.
Total (excluding Dhubri) up to the end of 1901-1902.	Dhubri.	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total (excluding Dhubri) up to the end of 1901-1902.	Gauhati.
34	35	36	37	38	39	40	41	42	43	44	45	46
1,568	...	128	10	8	28	2	35	25	5	1	643	109
522·64	...	42·67	3·33	2·67	9·33	0·67	11·67	8·33	1·67	0·33	214·33	36·33
709,914	...	46,143	3,281	3,591	10,412	885	9,922	8,518	2,357	331	227,590	34,361
3,550	...	1,980	1,437	1,818	1,992	1,647	1,458	1,582	1,908	1,003	2,203	2,137
272	...	271	369	1,047	306	1,014	530	604	1,245	1,003	56	308
1,358	...	1,081	985	1,344	1,115	1,320	850	1,022	1,411	1,003	1,062	945

contd.

Transplanted.									*Matikalai.*						
Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total up to the end of 1901-1902.	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.
57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
...	...	...	...	...	...	...	...	2	96	11	9	23	1	25	24
...	...	...	...	...	...	...	...	0·67	32·00	3·67	3·00	7·67	0·33	8·33	8·00
...	...	...	...	...	...	...	...	1,044	9,640	595	604	2,187	67	2,784	3,060
...	...	...	...	...	...	...	...	1,677	1,140	249	276	489	203	866	603
...	...	...	...	...	...	...	...	1,355	79	43	129	123	203	185	123
...	...	...	...	...	...	...	...	1,558	301	162	201	285	203	334	382

STATEMENT XI

Experiments by Supervisor

—	*Malik lai*—contd.			Mustard.					
	Dibrugarh.	North Lakhimpur.	Total up to the end of 1901-1902.	Dhubri.	Gauhati.	Barpeta.	Tezpur.	Mangaldai.	Sibsagar.
	73	74	75	76	77	78	79	80	81
Number of experiments ...	...	13	537	2	123	30	13	18	3
Total area cut, in acres ...	...	4·33	178·76	0·67	41·00	13·00	4·33	6·00	1·00
Total crop reaped, in lbs. ...	...	1,628	52,382	501	14,302	4,630	2,546	2,059	351
Maximum per acre, in lbs. ...	...	954	1,140	796	801	753	878	628	405
Minimum " " ...	...	129	14	710	55	135	283	[illegible]	313
Average " " ...	...	376	293	747	348	356	588	343	351

—continued.

Kanungos and Mandals—continued.

					Sugarcane.									
Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total up to the end of 1901-1902 (excluding Dhubri).	Gauhati.	Barpeta.	Tezpur	Mangaldai.	Sibsagar.	Jorhat.	Golaghat.	Dibrugarh.	North Lakhimpur.	Total up to the end of 1901-1902.
82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
16	30	...	5	648	103	19	3	12	13	36	16	...	...	554
5·33	10·00	...	1·67	215·98	6·86	1·26	0·20	0·80	0·86	2·40	1·06	...	...	35·51
2,137	4,900	...	456	83,232	9,211	1,635	302	1,566	2,027	3,653	2,830	...	...	59,863
740	813	...	462	1,388	...	...	...	...	...	...	...	...	...	...
185	307	...	141	54	...	...	...	...	...	...	...	...	...	...
400	490	...	273	385	1,342	1,297	1,510	1,957	2,356	1,522	2,669	...	...	1,685

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